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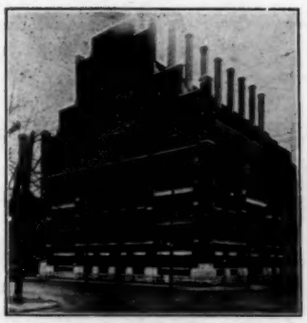
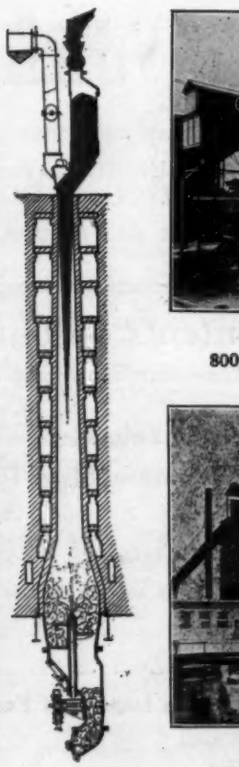
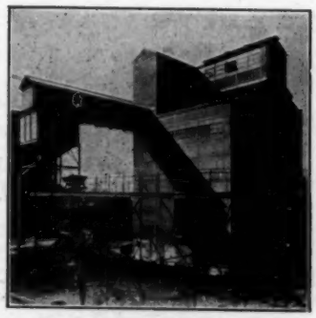
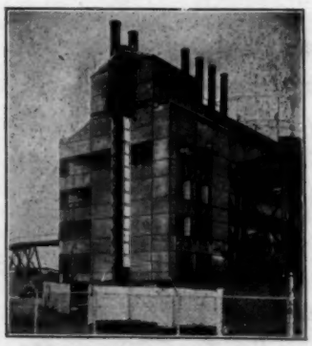


Toronto, Ont.
5,000,000 cu. ft. per day

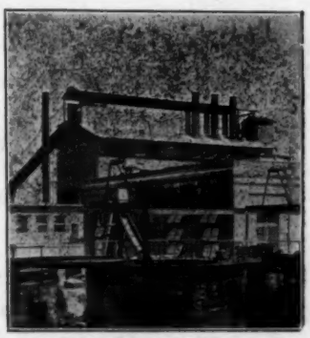




Fargo, N. D.
800,000 cu. ft. per day



Portland, Me., 2nd Plant
750,000 cu. ft. per day



Fall River, Mass.
1,600,000 cu. ft. per day

Views of Plants *Completed* in 1926

Also Completed

Stamford, Conn.	1,100,000 cu. ft.
Buenos Aires	3,500,000 cu. ft.

Under Construction

Springfield, Mass.	2,800,000 cu. ft.
Toronto, Ont. (ext.) ..	600,000 cu. ft.
Santiago, Chile	3,000,000 cu. ft.

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SIXTY-SEVENTH YEAR

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AMERICAN
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Vol. 126. No. 3. NEW YORK, JANUARY 15, 1927. Whole No. 3615.

Complete Gasification in Switzerland

Description of tests made with the Rincke apparatus

Ismar Ginsberg, B.Sc., Chem. Eng.

ONE of the most important technical problems confronting the gas industry today, and that also means a problem that is intimately connected with the future growth and well-being of the gas industry at large, is the proper selection of a gas-making process. The question has often been asked as to what the gas-making process of the future is going to be. Shall we concentrate on the manufacture of water gas or coal gas, or will the by-product coke oven supply the gaseous fuel of the future? The relation between the gas industry and the motor fuel problem has also been stressed, and it has been indicated that the motor fuel of the future [illegible] made in part, if not entirely, by the gas works, the fuel benzol being extracted from the gases obtained in the carbonization of coal. The recent congress on the utilization of soft coal, held in Pittsburgh, brought to light certain important phases of the coal carbonization problem, and eminent scientists and technologists told of progress being made both here and abroad along these lines. The liquefaction of coal with the aid of hydrogen gas under great pressure and high temperatures was also discussed, and it was shown that the Bergius process, or berginization of coal, as it is sometimes called, produces a fuel gas in addition to oil. The oil obtained is a synthetic petroleum from which motor fuel, lubricating oils and gas oils can be distilled, and the gas has thermal value and can be used as a domestic or industrial fuel. This process has been hailed as one that will go far in solving the motor fuel problem.

Coal Gas Plants Not for Benzol Alone

If motor fuel is to be obtained from coal, it stands to reason that the process of recovering it cannot stand on its own two legs. There is too little benzol to be derived from coal and too many other products that are obtained along with it to make it possible for coal carbonizing plants to exist for making benzol alone. Benzol must be considered as the by-product, a substance obtained in the manufacture of coal gas. It therefore stands to reason that the process of making gas admitting at the same time of the recovery of benzol is a medium temperature process. Thus it may be held that if the gas industry is going to develop along these lines one of the so-called low temperature processes will be adopted as the ultimate gas-making process. But there are many of these processes and up to the present time none of them has attained any commercial significance. Furthermore, they introduce all sorts of difficulties, for a special grade of coke is obtained as a by-product and this coke must be sold for domestic or industrial use, if the process can be called an economic success. This is in itself not a situation that can be termed most happy from the standpoint of the gas company.

Complete Gasification

On the other side we have the so-called complete gasification process. This process would convert all the solid fuel into gas with a minimum recovery of such products as tars, ammonia liquor, etc. If the gas industry is going to develop just as a separate industry, without any connection with any other, particularly the petroleum and motor fuel industry, then it would appear that there are many reasons why complete gasification is the logical process that the gas companies must eventually adopt. For it will unquestionably give the largest amount of gas and it will be necessary to have huge supplies of gas to supply the various domestic and industrial demands that will prevail in the near future, if the gas industry continues progressing, as it has done in the recent past, along gas refrigeration, gas incineration, gas house heating and industrial gas lines. But little work has been done on complete gasification in this country and the writer himself knows of just one experimental installation the results of which have never been made public. He does not wish to be misconstrued as holding any brief for this process or standing on the platform that it is the solution of the gas-making problem, but it has

certain advantages and certain characteristics that make its study profitable and interesting. He has called this article complete gasification in Switzerland for the reason that certain extensive experiments have been carried out in that country on this process which will be of interest to the American gas engineer, and the remainder of this article is taken up with a description of these experiments and a discussion of their importance. The reader, if interested, can obtain a full account by referring to the original article, in German, in Monats Bulletin, Schweizer Verein von Gas und Wasserfachmaennern, volume VI, number 11, pages 333 to 343.

Gas Consumption Growing Everywhere

It appears that gas consumption is growing all over the world and the problems of the gas man are increasing along with this development, and as has been indicated above particularly along the lines of meeting this demand by a process of gas making which will give the best results under most favorable economic conditions. The attention of the gas man in Switzerland has also been directed to the manufacture of gas by complete gasification. Difficulties have been experienced in that country in getting rid of the excess coke produced on the coal gas works, and efforts have been made to use this coke in the manufacture of water gas, and this development was instrumental in focusing the attention of Swiss gas men on the complete gasification process.

It is not necessary to explain here what is meant by complete gasification as the very words are self-explanatory. Complete gasification may indeed be practiced to a certain extent by those works that operate a coal gas as well as a water gas set, but the complete gasification process is generally the one in which these operations are all carried out in one and the same apparatus, that is not only is coal distilled at a high temperature for the production of coal gas, but the coke residue is thereafter used in the production of gas by the water gas process. The heat in the water gas produced in this manner is used for heating the retorts in which the coal gas is manufactured. This is in general the principles on which complete gasification is based, the individual processes varying in accordance with the design and construction of the apparatus used.

The Rincker Process

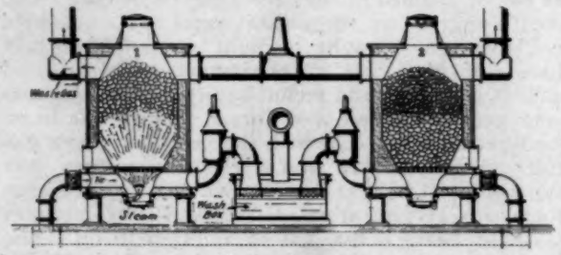
Tests have been made on one of these processes, which is known as the Rincker process, these having been carried out on a practical scale in the gas works in Utrecht, Holland. Results obtained with this process indicated that the yield of gas per ton of coal, which was free from dust and contained not more than eight per cent of ash and a maximum of thirty-five per cent of volatile matter, was 1,500 cubic meters of gas of 3,100 calories heating value. Additional tests were carried out in Switzerland over a period of one month and the results showed a production of 1,300 cubic meters of gas of 3,100 calories thermal value per ton of coal. The tests were not considered as corroborative but the results obtained are worth studying.

In the first place a blue water gas test was carried out over a period of twenty-four hours and the generators were charged with coke. Thus 12,378 cubic meters of water gas were made from 7,072 kilograms of coke. The heating value of the gas was 2,416 calories at 666.7 millimeters pressure and a gas temperature of 6.5 degrees C. The coke contained 2.5 per cent of water and 8.4 per cent of ash. A ton of Ruhr coke yielded 1,750 cubic meters of water gas of 24.6 calories thermal value which corresponded to 1,562 cubic meters of gas of 2,705 calories thermal value at a temperature of 15 degrees C and a pressure of 760 millimeters of mercury.

Another test was made with carburetted water gas and in this case the duration of the test was the same. The production was 8,500 cubic meters of gas of 3,520 calories heating value from a total weight of coke of 3,833 kilograms. The consumption of gas oil amounted to 2,206.4 kilograms. The average barometer reading was 668.9 millimeters and the gas temperature was 12 degrees C.

Description of the Rincke Apparatus

The apparatus which constitutes the Rincke complete gasification installation consists of a pair of cylindrical gas generators which are provided with a suitable jacket of sheet metal, 2.3 centimeters in diameter and 3.2 meters high. The interior of the generators are suitably lined with firebrick and the lining ends in two frustrums of a cone at the top. Each generator can take care of 3,250 kilograms of fuel. The charging opening at the top is shut by a suitable cover, and the lower portion of the apparatus is also closed by a door and through this the steam pipe is introduced. The grate, which is about 45



Rincke Apparatus

centimeters above the lower door, has a diameter of one meter. It is composed of a number of iron bars made with the section of a right angled triangle. The draft pressure is about 600 millimeters of water and about 1.65 cubic meters of air are blown into the generator every second. There is also a secondary air supply, fed through a 200 millimeter diameter pipe, located in the upper portion of each generator. The waste gases are removed from the generators and collected in a flue which runs directly above them. They may be passed through a waste heat boiler and steam of eight atmospheres pressure can be produced with their aid.

The two generators are connected together by means of piping which is lined with firebrick, and

each of the two generators is also connected to the same hydraulic main and tar separator. The latter connections are made in the lower part of the generators under the grates. Gas oil is sprayed into the generators by means of a steam-driven pump, the oil being first passed through a meter. The oil line ends in a spray nozzle which is located in the upper portion of the generator, being inserted through the top cover, and thus the stream of oil is well distributed over the mass of incandescent coke in the generator. Openings are also provided in the apparatus for the removal of ash, which is done every eight to twelve hours. The doors which close these openings are all provided with firebrick lining, which must be removed each time that the ash is removed. Various valves and temperature and pressure instruments are required for controlling the operation of the apparatus.

Operation Is Simple

It may appear that this is a very complicated installation, but as a matter of fact its operation is simple and convenient. One man is all that is needed to operate the apparatus. However, it is best to have two attendants, as the generators must be charged every hour. This apparatus was installed in a Swiss gas works for testing purposes. The gas that was produced in this apparatus, after it has passed through a wash box, was carried along to the purifiers and then into a gas holder of 7,000 cubic meters capacity. The back pressure which was induced by the weight of the holder lifts had a very bad effect on the productivity of the generators. The mixing of the gases was properly controlled so that the thermal value was kept up to specifications. It was found that it was better practice to mix the gases before they entered the coolers, and the amount of water gas added amounted to 100 to 150 cubic meters per hour. The gas which is made by this complete gasification apparatus can be mixed directly with coal gas just after being made and then passes through all the common coal gas washing, scrubbing and purifying apparatus, or it may be stored in holders and then mixed with the coal gas.

Operation of Apparatus

The manner of operating the apparatus in a complete gasification process was as follows. Water gas is alternately manufactured in both generators, and the gas is then led through the other generator in which a layer of new coal has been introduced, and this is distilled at a low temperature by means of the sensible heat which is contained in the gases that are led through it. If it is assumed that the combustible matter in generator 1 is completely coked, then hard coal is charged into generator 2, and the amount of this coal corresponds to that of the coke that has disappeared during the previous stage of the process. The layer of hard coal is therefore placed on top of a layer of incandescent coke, which has a temperature of between 700 and 800 degrees C.

The first period consists of the passage of a current of air under the grate of generator number 1 for a period of two minutes and the heating of the coke up to a temperature of 1,200 to 1,300 degrees C. The gases of combustion are led through the waste heat boiler.

The second period consists in the introduction of a current of steam at five atmospheres pressure under the grate of gas generator number 1 for the production of water gas. The water gas then passes out of the first generator and through the connecting main into the second generator. It passes through the layer of coal, with the result that the latter is partially gasified. The volatile ingredients of the coal are evolved and enrichen the water gas and are fixed as permanent gases by passing through the dull-glowing lower layer of coke.

The process is interrupted after a period of five to six minutes has elapsed. Then the process is started all over again with the preliminary blowing, the steaming and so on. This continues until the coal in generator 2 is converted into coke.

At this point the analogous process is started on the other side, which consists in the manufacture of water gas in the generator number 2 and carburetting this gas by leading it through a layer of coal in generator number 1, as described above.

Making Blue Water Gas

Blue water gas is made by alternate blowing and steaming of the generator, but the blowing operation is carried out simultaneously in both generators and the gasification is carried out in the generators connected in series with one another. This process, in which the depth of the layer of coke varies according to whether the generator is blown or gased, must yield a water gas of exceptional quality. For the conditions of the gasification are such that the formation of carbon dioxide is enhanced during the blowing period and that of carbon monoxide during the steaming period. This contention was proven in the actual practical operation of the process. An analysis of water gas made by this process showed the following composition: carbon dioxide, 1.8 per cent; oxygen, 0.6 per cent; carbon monoxide, 44.6 per cent; hydrogen, 49.3 per cent, and nitrogen, 3.7 per cent. The specific weight of the gas was 0.552 and its heating value was 2,840 calories at zero degrees C and 760 millimeters pressure.

Making Carburetted Water Gas

Carburetted water gas is made in the following manner. The coke in generator number 1 is raised to a higher temperature during the blowing process, but the gases from the first generator are made to pass through the layer of coke in generator number 2, and this machine is brought up to a temperature which is right for the decomposition of gas oil. These gases are mixed with a certain amount of secondary air, which is allowed to flow in through a special valve in the upper portion of the generator in order to produce complete combustion. The next stage in the process consists in blowing steam under the generator number 1 and producing water gas therein. This gas is then led into generator number 2 where it comes into contact with a spray of gas

oil. The oil is sprayed over the surface of the incandescent coke and is accordingly converted into gas, provided, of course, the temperature within the generator is suitable. The result is a carburetted water gas.

The oil stream is stopped after a period of five to six minutes and the flow of steam a short time later. Then a new blowing period begins and the alternation of generators in the series can be changed at will according to the nature and the quantity of gas oil used. It should be mentioned here in passing that the manufacture of carburetted water gas appeared to be a very difficult undertaking according to this process, for the reason that a temperature of 1,000 degrees C is required for the conversion of the oil into gas. Temperatures in excess of 1,000 degrees C are unfavorable for the reason that too complete decomposition of the oil vapors and the oil gases ensues with the formation of graphite which stops up the pipe lines. This happened a number of times during the experiments that were carried out with this apparatus. Satisfactory results were obtained during the first few hours of the experiment and a gas of 4,200 calories and in good yield was obtained. However, during the last few hours of the experiment the calorific value of the gas fell to 3,400 calories, although the quantity of oil added did not change. All the pipe lines were found thereafter stopped up with graphitic deposits. This led to the practice of using two electric pyrometers so as to obtain closer control of the temperature conditions within the carburettors. The author of the original article says that up to the present time there has been no opportunity of making any additional experiments with the set in the manufacture of carburetted water gas.

Uniform Gas Produced

The author also states that the set has worked properly as far as the uniformity of the manufactured gas is concerned and that the product was always up to specifications, namely, 5,000 calories at zero degrees C and 760 millimeters pressure. The production of the gas works amounted to 10,200 cubic meters per day and hence it was necessary to add about 2,500 to 2,600 cubic meters of blue water gas or about 3,300 cubic meters of mixed gas.

The author concludes his report with a description of the results that were actually obtained with this complete gasification experiment. The production of gas in the set was 3,000 to 3,300 cubic meters per day or about 23,000 cubic meters per week. This quantity of gas was manufactured in working periods of five to six hours, which were distributed at will throughout the week. This method of working was economical of labor, as it was unnecessary to organize a two or three shift labor force. On the other hand this intermittent operation of the set did not favor a maximum production of gas from the fuel. The generators start operating very rapidly. After a few minutes they begin to make gas, and this is true even when they have been not operating for two to three days before. Fuel is consumed during that time as well. Proper consideration must be paid to this loss in arriving at the true efficiency of the Rincker complete gasification set.

Thus 38,790 cubic meters of gas were manufactured in nine separate operations over a period of eighteen days, each operation lasting eight hours.

After the generators had been operated for seven hours, both of them were cleaned out of ash, a work which required four laborers. Then a wood fire was kindled underneath the grate, the ash removal doors were cemented so that they are hermetically sealed. The ash removal takes about one hour and the latter operations about thirty minutes. Then the coke and coal were filled into the generators and the apparatus were blown for a period of fifteen to twenty minutes. Thereafter the first gasification period begun.

Further Details of Operation

This lasted for five to six minutes and then the generators were blown hot with air for a period of two minutes and this lasted for the remainder of the time up to the sixteenth hour. Every hour each of the generators were fed with additional supplies of coal which amounted to approximately 250 kilograms. Then a blowing period of six to eight minutes followed. During the first hours six hundred cubic meters of gas were obtained and during the last hours from three to four hundred cubic meters of gas, according to the quality of the coal used.

Ruhr coal and Dutch coal were used in the test, and this coal was screened so that the size of the pieces of coal fed into the generators was not more than fifty to eighty millimeters. These coals can be completely gasified and they both give the same quantity and quality of gas. On the other hand those coals which contained much volatile matter did not give good results with this process. It was found that these coals could not be coked in the generator between two layers of coke by leading the water gas produced in one of the generators through it and thus produce a complete gasification. When the consumption of coke in the generator which produces the water gas has reached such a point that it has to be replaced, then it was found that the semi-coke which is produced in the other generator was still full of considerable volatile matter. If the operation of the gasification process is reversed at this point, then much thick, dark smoke is evolved during the first part of the blowing period. In order to get around this difficulty the process must not be reversed and the water gas must be made in the same generator in which the first portion of the process had been carried out, steam being introduced into it, and the sunken layer of coke is then supplemented with additional coal.

Smoking Could Not Be Avoided Entirely

It was nevertheless found that in spite of these precautions it was still impossible to avoid smoking entirely and hence there was also a large loss of valuable volatile ingredients when this kind of coal was employed. It is therefore necessary to reduce this loss to an absolute minimum and in order to do so all sorts of devices and changes in operation were employed. The appearance of the blow gases easily

(Continued on page 62)

What You Should Know About Meter Diaphragms

F. P. Hutchinson

Vice-president Sprague Meter Co.

Editorial Note: The following is a letter written by Mr. F. P. Hutchinson to all of his salesmen in order to further instruct them in their product. It is our opinion that much of the data will be of interest to the gas man at large and we have obtained permission from Mr. Hutchinson to publish his letter.

THE materials entering into the manufacture of meters, their dimensions, weights, gauges, physical and chemical characteristics, can be governed before fabrication, with the exception of diaphragm material. This has to be taken as Nature produced it in the skin of the lamb, its desirability determined only by careful sorting, working and inspection of certain classes of material. Sheep or lamb skin has been used by the makers of dry gas meters for diaphragm purposes since the inception of the industry and no satisfactory substitute has yet been found to take its place.

The requirements for our diaphragm are exacting and the following factors enter into the purchase of our skins: 1, habitat and age of the animal; 2, slaughter; 3, preservation of skin before tanning; 4, ability of the tanner to carry large stocks for proper sorting; 5, tannage procedure and control; 6, mutual understanding of buyer's and seller's problems. So our folks may have a greater knowledge of these factors we will go into them in detail.

Sheep Skins Are By-product

1. Sheep are raised in all the countries of the temperate and torrid zones except in Japan. In Japan a native wire grass hinders digestion and a native hoof disease prohibits propagation. Sheep skins are a by-product of the two commodities of wool and mutton and as these two are the prime reasons for the raising of sheep, naturally the kind of animals that are the best for these commodities are the ones chiefly raised. In the cattle industry the steed that has had the best living conditions and that yields the primest beef will also produce the best hide. The opposite is true of the sheep industry. Between the inner true skin and the outer, epidermis, is a layer of cells and tissue wherein the hair roots and sweat glands lie. The more dense the wool, also the more curly the wool or hair, the more open this tissue area is. Incidentally the inner skin is known as the flesh, the outer as the grain, and the hollow area as a pipe in the finished leather. The best wooled sheep have not only this large pipey area but have a skin poor in strength and appearance. The poorest wooled sheep's skin has the best grain and best tensile strength. Intermediate graders have as a rule the best meat. The grades, therefore, are best wool, fair mutton, poor skins, medium wool, best mutton, fair skins, poor wool, medium mutton, best skins. Sheep that are well cared for and housed during part of the year will turn out different skins than those on the range. Sheep wool is heavier in the colder season than in the warmer and adipose tissue (fat next to skin) varies with climate and season. Ticks, body vermin, brier and wire scratches, seeds that are rubbed into the skin, shear marks from clipping, are additional factors from different points of propagation. Heavy wool on sheep, owing to the weight of the wool exerting a pull on the skins, will cause a certain defect known as "rib." Housed sheep will develop an intestinal disorder that develops the defect known as "cockle." Without going too deeply into all of these factors, as pages of their description and results might be written, sufficient reasons have been given why particular sheep skins are the most desirable. We have found that the United States packer's supply, properly sorted for weight, give the best results. New Zealand skins have been the criterion, or were supposed to be, by which meters were judged; but few meter men were able to tell New Zealands from Patagonias. We have found as a rule that New Zealands are prone to be pipey over the whole area of the skin, have more cockle than those of the States, and as they are heavy in wool are also more ribby than those of the States.

The younger the lamb is killed after weaning, the closer knit the skin texture will be and the more perfect the grain. On the other hand too small a skin will not give a good cutting pattern. And, of course, the owner of the flock will not turn in many lambs under the age when the wool and mutton will be both available. We find spring lamb yearlings running a skin about seven square feet satisfactory. Lambs or sheep butchered after the cold season is over do not have the heavy fat deposits as noted above and make therefore a tighter, firmer skin.

American Packers Produce Good Skins

2. You have heard of the efficient way in which the American packers utilize all and every part of the animal that they butcher. Obviously they will produce as good a takeoff or skin from the sheep as is possible. Sheepskins are either usable as such or are turned into glue stock with a great difference in their value. The packers have specialists in each operation and the resultant removal is reflected in a more perfect product than can be done otherwise. Contrasted with this is the so-called country takeoff whereby butchers, ranchers, or small packers remove the pelts. Knife marks and strains are plenti-

ful and the pelt has lost much of its value. Packing houses are also much more efficient in pulling the wool which, if not done properly, will affect and loosen the grain on the finished skins. In all other operations the packing houses lead the way, even the chemicals used for the processes being made and applied to standards.

This, then, is also another reason why American sheep are the most desirable. The larger buyers and consumers have been interesting the New Zealand, Australian, Cape and South American interests in the need for efficient takeoff and no doubt within the next few years a better grade will result from these points. Some of the large tanners have packing house men on their boards of directors, and, all things being equal, this helps in selections, carrying of stocks, ability to work together on betterments, etc. We feel that such tanners, as sources of supply for meter leather, give us the better product.

Preserving Sheep Pelts for Leather

3. Briefly the method of preserving sheep pelt for leather is as follows. After the heat has left the pelt it is run through a cleaning process and a depilatory is applied for removal of the wool. Lime is most commonly used for this purpose, combined with sulphides or arsenic. The wool is then pulled and the pelt is run through a machine for removing the odds and ends of flesh that still remain. In some cases this fleshing is done before pulling the wool and is often done by hand. If lime is left in the pelt too long it will weaken the fibre and will cause the grain to become drawn. It is necessary therefore to delime by applying a solution containing something that will form an easily soluble solution with the lime, as sodium bisulphate, borax, lactic or sulphurous acid, ammonium chloride, etc. As a rule this so-called "bate" is purchased in a concentrated form from patentors and manufacturers of the solutions under trade names. A drench of bran is then applied so that the skin will become soft and clean and will approach more nearly the condition it was in when removed from the sheep. The skins are then pickled in a mixture of salt and sulphuric acid with water, are folded, bundled, or pressed into casks, and are ready for delivery to the tanner or for storage.

We have found that the packing houses doing these processes themselves give a more satisfactory product to the tanner than if done by others. Imported skins, especially those that have to cross the Equator to reach us, have to be watched closely for a defect caused by sweating during the voyage.

Should Buy From Larger Tanners

4. If you had your choice of buying your shoes from either the shoe manufacturer or a village store, price and quality being equal, you would buy from the one giving you the greater range of sizes, fits, colors, shapes, freshness of stock; in other words from the maker. So in the purchase of meter skins we find that the large tanner with a diversity of output is better fitted to give us the selections demanded. Our 1A skins must not be over .65 millimeter (.026 inches) thick where the shoulder line crosses the back; must be full skins, well flayed; must be generally free from tears, holes and grain defects; must be evenly weighted; must be generally free from cockle and ribs; must finish up into a firm, tight, 85-foot-to-the-dozen skins. These requirements compel the tanner to make his raw stock purchases months in advance and there have been times when no raw stock was available. Then, too, we have known where a carload of meter lambs has only sorted out 40 per cent efficient at the time of tanning.

Method of Changing Pelts Into Meter Leather

5. An outline of the method of changing pelt into meter leather is as follows. Pickled skins are sorted into "Spragues." The pelts are next piled into a hydraulic press stand and are dubbed with an oil mixture, pressure is applied and the natural sheep grease is all removed. Then follows a short drumming in a large revolving wooden drum fitted with wooden pegs or shelves to break out the pelt and make it receptive to the tan liquor.

In the hemlock process of tanning by the still pit method the pelts are moved daily from weak to stronger solutions of ground steeped hemlock bark in pits filled with the solution, the specific gravity of this solution increasing as the skins move forward. After the hide substance has thus been changed into leather the skins next go to a shaving machine where the flesh side receives a trimming by a helical knife-roll so that the thickness becomes more uniform and so that rough and straggly bits of the tanned flesh will be removed. Next comes a putting out (similar to a wringer in a laundry) to remove the water. The skins are then moved to a loft, stretched out and tacked on boards and left to dry by natural room heat. This condition is known as "in the crust" and is the best point for another careful sorting for defects and weight.

Meter leather is then slightly dampened, a quantity of about 150 pounds again put into a drum with 25 per cent by weight of stuffing mixture, revolved for a short time and then moved to a light "staker" for finishing. If too much weight is put into a drum at one time the skins will receive too great a blow as they fall over the shelves or pegs as the barrel revolves. The stuffing mixture contains neats foot oil, degras, the refined grease recovered from the hydraulic press operations previously mentioned, and neutral soda soap. The staking machine consists of a U-shaped bed, about eight inches between the U-sides, upon which the skin is placed. An arm holding two rollers, which open on the in-stroke and close on the out-stroke, grips the skin and pulls it away from the operator who holds it and turns it between strokes. The tension is adjustable and a very light pull is made on our skins, just enough to ease out the stiffness.

The skins then go to a measuring machine, a series of rollers lifting as material passes under it. This movement actuates cams, and the square footage is marked on each skin. Skins are again sub-

jected to a close inspection for weight and appearance and are then bundled in lots of five or ten dozen for shipment.

It should be remembered that the skin is a natural product and that the conscientious tanner has his hands full in getting out a uniform product.

"Secret Processes" No Longer Obtain

6. There have been times when we took our meter skins as emergency rations; other times as table-d'hote, but now we take them a la carte. Tanners are not so prone, now, to talk about secret process; chemistry makes that "all wet." There is no reason why meter skin buyers cannot declare themselves as much as any other purchaser of leather. There is no use in taking the seller's viewpoint always; make him take our viewpoint and specifications as the buyer.

We presume that no two meter manufacturers will agree upon all points as to the merit of a particular piece of leather; each has an operation perhaps a little different or a requirement not the same. Therefore, from our viewpoint, there is no such thing as buying from meter leather stock. Our orders are placed to verbal and written instructions and material is subject to return if unsatisfactory. For five years we have been working close to our sources of supply, have "dropped in" for visits to the tan house, have interested their best minds in our problem, have had recourse to their laboratories, and they have spent much time in our plant, have watched our fabrication, and have given freely of good advice.

For the past two years we have been experimenting with the so-called chrome diaphragm. We started with East India, English chrome, English finish skins and proved to our satisfaction that diaghragms made from them would outlast the regular diaphragms we were using. We early recognized, though, that the supply of these was subject to many factors beyond our control, and then we worked on East India raw stock tanned and finished in this country. This, too, had its drawbacks; supply was unstaple and prices were high, and the skins were too small to give a good cutting pattern. We then turned to American lambs and found that a combination of chrome salts and hemlock could be used in such a way that the resultant skin was practically as good as the East Indias. Tanning and diaphragm manufacturing problems have been worked out and we are now in position to deliver these better diaphragms.

Vents

The Laclede Gas Co., St. Louis, like a great many other companies is very much opposed to unvented gas appliances being installed on its lines and while they cannot force the customer to vent his appliance they do feel that where such appliances are found by any of the company's employees that it is the company's duty to recommend that the customer have a vent installed at once. J. J. Burns, superintendent of the commercial department, has tried several plans with the result that he has finally adopted the form letter which is quoted here:

THE LACLEDE GAS LIGHT COMPANY

Our representative, who called at your home recently, reports you have a gas water heater in use without a flue connection, also that he attached a caution tag reading as follows: "THIS WATER HEATER SHOULD NOT BE OPERATED WITHOUT A VENT PIPE CONNECTED TO AN ACTIVE FLUE."

Our sole purpose of having this tag attached to your water heater is to bring to your attention the fact that the vent pipe is a vital part of the water heater equipment and should be installed without delay. We have only your interests in mind.

The Gas Company will sell just as much gas through the heater whether it is vented or not, but we would be derelict in our duty to our customers if we failed to advise them that there is an element of danger present where the products of combustion from a heater are permitted to escape into the house. These water heaters are very carefully designed and constructed and when installed in accordance with the rules of the Gas Company may be depended upon to render safe and satisfactory service. You do not wish to subject any member of your family to discomfort, or possible ill effects to health.

We will install the proper size vent pipe for the sum of $2.75 or, if you prefer, you may have the work done by your local tinsmith. We are not so much concerned as to how the work is done as we are in having the present condition remedied.

Thanking you in advance for your co-operation in this matter, we are,

Yours very truly,

THE LACLEDE GAS LIGHT COMPANY,

Per J. J. Burns,
Supt. Commercial Dept.

This letter handles the matter in a diplomatic manner and we understand that it has the desired results.

A great many people object to venting appliances for the sole reason that "venting costs money," yet this may be overcome by employing a litle tact and pointing out to the customer that such appliances as are vented are safer and more satisfactory in the point of service and that venting frequently saves wall paper and draperies.

ACTUAL BAKING TEST MADE ON GAS RANGES AT A. G. A. LABORATORY

Each Range That Is Approved Must Bake Batch of Biscuits Evenly

A housewife purchasing a gas range that has the approval seal of the American Gas Association Testing Laboratory on it can expect that range to give good and efficient service twice as long as a range without the approval seal, according to R. M. Conner, director of the laboratory which is located in Cleveland, Ohio. One of the purposes of the laboratory is to insure the housewife that she is getting full value when she purchases a gas range, and the requirements for approved ranges call for high standards of safety, efficiency and durability.

"The housewife should consider the approval seal a guarantee that the range will have twice the useful life of a range without the seal," says Mr. Conner. "In testing gas ranges it takes the laboratory staff more than 45 hours to complete the 160 different tests on each range, and every test is made with one purpose in mind—the range must give the housewife the maximum of efficiency. Among the many tests made, such as the scientific determination of the safety features, etc., are several that the average layman can readily understand.

"The laboratory always has on hand a supply of biscuit dough, and every range must bake a batch of biscuits and bake them evenly and thoroughly. If the range is approved, the purchaser can rest assured that it will bake well. The scientific method of determining the evenness of oven temperature, by pyrometer readings was discarded in favor of the more homely method of actual baking, to insure the housewife that the laboratory approval seal is a seal of proven merit."

Actual broiling tests are also made to insure uniformity of heat distribution from the broiler burner.

"In the twenty months of its existence the laboratory has tested and approved 1,731 gas ranges, 14 types of flexible gas tubing and 44 space heaters," Mr. Conner adds. "Already the gas company members of the American Gas Association have pledged themselves to support the laboratory one hundred per cent by selling only those appliances that bear the official approval seal of the laboratory. Leaders of the gas industry predict that in the near future no gas-using appliances other than those officially tested and approved will be offered for sale to the public."

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OUR OWN HISTORY CLASS

There is a street in London called Bread Street, and it is famous for having been the birthplace of the great English poet, Milton. The street was named because it contained a market where bread was sold. At that time bakers were not allowed to sell their products anywhere else in London, as compared with the millions of bake shops in America today. The bake shops themselves have been changed in the years since Bread Street first boasted of a bread market, for today they are spotlessly white, with glistening equipment. The old-time coal bins have been replaced by gas pipes, for with gas the bakers can assure their customers of clean products.

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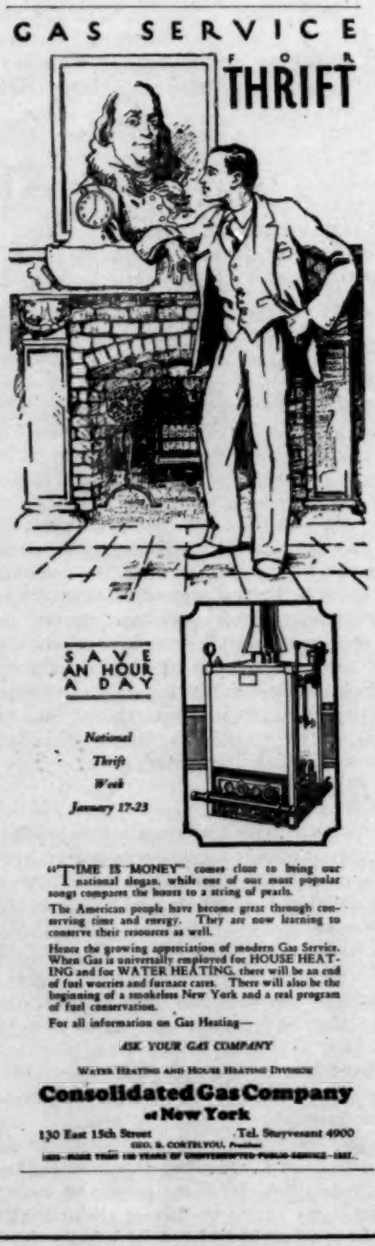
GAS SERVICE
FOR
THRIFT
SAVE AN HOUR A DAY
National Thrift Week
January 17-23
"TIME IS MONEY" comes close to being our national slogan, while one of our most popular songs compares the hours to a string of pearls.
The American people have become great through conserving time and energy. They are now learning to conserve their resources as well.
Hence the growing appreciation of modern Gas Service. When Gas is universally employed for HOUSE HEATING and for WATER HEATING, there will be an end of fuel worries and furnace cares. There will also be the beginning of a smokeless New York and a real program of fuel conservation.
For all information on Gas Heating—
ASK YOUR GAS COMPANY
WATER HEATING AND HOUSE HEATING DIVISION
Consolidated Gas Company of New York
130 East 15th Street Tel. Stuyvesant 4900
GEO. B. CORTELYOU, President

Gas Advertising Problems and Practices in Small Towns

R. J. W.

TOO many irons in the fire—too busy making gas, too busy collecting bills, too busy doing the thousand and one jobs that the manager of a gas plant in a small town has to take care of—that is the substance of nearly all advertising problems arising in the small community.

In the small town where gas is gas and the manager is public relations director and personnel manager and new business manager and paymaster and purchasing agent, the problems are quite different from those in the larger town whose larger company has a larger and more specialized staff. In the analysis, the problems of advertising are much the same in generalities, wherever they occur. The local conditions, though, have much to do with their complexity.

The first question, of course, is "Who is advertising?" A company of the type I have in mind is operating in a community of from 3,000 to 15,000 population. The population per customer probably averages around 4.5. There are from 3 to 40 miles of gas mains in the entire distribution system with from 40 to 80 customers per mile of main and only about 10 per cent of the population has gas ranges. The amount of cubic feet of gas sold varies from 4,000,000 to 70,000,000 for the year, and the total income from $8,000 to $120,000 a year. You can picture just this size of town—quiet, semi-industrious and domestically contented.

To the questions "Who prepares the copy? Does he have other duties?" managers of several companies answered:

"The writer prepares his own copy in addition to being manager of this property and director of public relations."

"The manager writes all advertising."

"Copy is prepared by the manager, whose duties are many and varied."

Problem Differs

The problem of advertising this company is different from the metropolitan community, which knows its gas company only from its bills and its publicity. Word of mouth publicity is dominant in the small town company's activities, because Miss Glutenstark, the cashier and payroll clerk, tells her girl chum that there will be a sale on gas ranges next week, or repairmen Jones tells Mrs. Jones that there was a leak out in Ward 2, (if the weekly press hasn't announced it as yet) and Mrs. Jones for want of other subjects, starts the story for its worth and as far as it will go. The company is pretty well known, too, by the community because either its rates are considered high and are the cause of antagonism of the residents, or because "our genial manager of the gas company" dips deep into the company or personal pocket and gets in line behind the seasonal civic enterprises. Mostly, the company is known because a relative works for it, or knows one who works for it. Word of mouth advertising is rapid and sure-firing.

So different is this word of mouth advertising! So different from the metropolitan type which does not spread far because of a greater diversity of subjects to think and talk about. The control of this type of advertising is the small town manager's job, requiring extreme tact and constant attention.

When to Advertise

The problem of when to advertise is solved partly by the local newspaper representative. He is ever at the manager's heels, suggesting the use of his paper to tell the community whatever the manager thinks should be told the community. Fortified with the usual selling points of the weekly newspaper, the solicitor doesn't let the manager forget when to advertise. He is usually around early in the week to get this week's copy, knowing that if he comes early and often enough he will get it reasonably within press time.

Newspaper advertising is fairly consistent due to the insistence of the solicitor. A grumpy manager or a shy agent brings lapses into the regularity. The tendency, though, is to advertise only when urged by seasonal factors.

"We advertise spasmodically," said one manager, "and it depends altogether upon the season of the year and local conditions."

Question of Cost

Advertising as a steady plan of telling the public and then constantly reminding, is seldom thought of. In the first place, it costs too much. There is no argument to the manager's statement when it takes this tack. Much study is necessary to appreciate the value of consistent advertising, balancing costs with results, and the manager has not the time. Neither have you nor I time to study this problem thoroughly, but generally speaking, we'll accept the answers of advertising analysis as correct in that consistent advertising pays.

If appliances are sold, the gas company campaigns them at different times. These are planned by the merchandise head if there is one, and approved by the manager. The advertisements sell, or try to sell, the certain fixtures or appliances, and then drop off as spasmodically as they started. Little institutional effort is attached to the campaign. Very often the manufacturer's representative writes the copy or supplies it from his headquarters. The manufacturer's name usually is not slighted in the copy.

The general rule of consistency of advertising must be remembered, if the small town gas company would put itself on a practical basis. Regularity must overcome seasonal advertising. This applies to all classes of advertising. If the company merchandises, its specific campaigns should be outlined far in advance so as to co-ordinate with the general advertising program.

There is little choice as to the medium to be used. The local press is always first choice and its pages should be used because it has the most thorough reading circulation. Small in the number of pages, the advertisement is not competing with sixteen or thirty-two pages of news and advertising.

Choosing Newspaper

If there are two or more papers, a definite choice should be made on the basis of circulation. Class circulation, while advantageous for some sales efforts is not the form for the gas company, which by its public nature, must extend service to all. Some advertising may be placed in the other papers. Each probably has its merits and no doubt has many "only-readers." But the chief medium should be selected on a strictly business basis of circulation value, even though grievances of semi-political nature often interfere. It pays in the long run, and one's advertising practices can never be criticized when based on orthodox methods.

Advantageous billboard sights are frequently used, and are good. By nature, the billboard is for those who may read as they run. A single idea, with copy sparingly used, is the only practical method of billboard advertising. Care should be given to the selection of location, not only from the number of readers and attention value, but also with the idea of maintaining the scenic beauty of the surroundings.

Each respective town has it own uses for certain other mediums. Direct mail is always good, but must be well done or it is useless as the handbill that clutters the sidewalk three feet from the distributing boy. The chief danger of movie slides is in the barrier that the theatre-goer builds up against any advertising that is forced upon him. His object is amusement, and subconsciously he resents having to read the advertising slides before or between pictures. Infrequency of copy changes bores him. Have you ever been in a small movie house when mischievous youngsters chanted the name of every advertiser immediately before his slide was projected? If so, you'd never use an advertising slide in a small town that has its single movie house.

Allowance Limited

Of course, the allowance for advertising a small town gas company is limited. There is hardly much left for other mediums after the newspapers have been taken care of.

A problem that every manager has met with is the one of advertising in church social programs or other local club affairs' programs. From a public relations viewpoint it can hardly be avoided. From the advertising angle it is without a grain of merit. The answer is a toss-up. "We find it impossible to refrain from advertising in church and club social programs," said a manager whose gas plant serves 8,000 in a town of 14,000. "In our opinion, this class of advertising is not advantageous except for the fact that it might be taken to the home."

"It is possible to refrain from this kind of advertising," said another manager from a town of 10,000, "by explaining that we must treat all alike and it would be financial hardship to advertise in them all."

"A small amount of space is taken with church publications issuing regularly," is the practice as told by the manager of a larger company whose advertising is planned. "Only one of two 'mushroom' mediums has received space during the past year. Since it was a year in which our advertising appropriation was materially increased much care had to be exerted in retaining the good-will of these publications and at the same time decline the medium for advertising purposes."

"We have not found it possible to refrain entirely from advertising in church or social programs," tells another manager, operating in a town of 10,000. "However, many are turned down—others are used for the sake of public relationship. We have never been able to discover that this form of advertising pays."

Adopt Policy and Abide By It

It is up to the company to form its specific policy on the question and then abide by it. The best plan is to say "no" to all who solicit, showing no favorites. The value of this is well illustrated by Mr. J. E. Moorhead, assistant publicity manager of the Mountain States Telephone and Telegraph Company, in answer to a query on the subject propounded by the Public Utilities Advertising Association and viewed by the leading utility advertising men of the country:

"Our telephone company has about come to the conclusion that good-will is not given free with anything. It first must be earned by good service and reasonable rates and then perfected by judicious advertising. Thus, what we call our publicity department is in reality an advertising department. We select the mediums of advertising as intelligently as we know how, keeping constantly in mind that we are purchasing agents and not charity contributors.

"Our experience is that the 'whiffleproof' mediums accept our checks as their honest due and we get nothing in return. True appreciation, if that's what we shall call the good-will that comes to us over the advertising value we try to buy, is likely to come only from those publications who really have something to sell.

"Finally, we get a little satisfaction out of the feeling that we aren't putting out any money that comes from our subscribers and belongs to our stockholders for anything that we can't defend in open meeting."

Why Advertising At All?

This, of course, leads to the ever present question, "Why advertise at all?"

The advertising of gas service and the appliances to utilize that service is to increase the business of the company. This results in large gross income, but does not increase its net per dollar invested provided it is earning a fair return in existing capital invested. The gas business is one which has to provide its service at the moment it is required, so the increase in service demands, as a result of advertising, ultimately means an increase in the capital invested in plant and equipment to provide the increased service. The result sought after in this increase in business is not only more send-out but a greater diversification of send-out, with a consequent increased operating efficiency of the dollar invested. If the gas company has a very heavy business for a certain few hours per day, and for the other hours only a comparatively small business, then the income per dollar invested is comparatively small, and the rate charged for service must necessarily be high in order that a fair return may be earned for the investors. This is more obvious in the instances of smaller communities.

If, by judicious, legitimate advertising in every conceivable way, and by intelligent solicitation—in other words, by intelligent merchandising—that particular utility can secure increased business, a large proportion of which comes at hours other than the peak hours, its plant and facilities have a much greater earning efficiency. The income per dollar invested is increased, and the rate can be reduced without adversely affecting the return for the investors. In this the consumer directly benefits.

Comments of Martin J. Insull

Speaking on this subject, Mr. Martin J. Insull, president of the Middle West Utilities Company, once told the delegates to the national convention of the National Advertising Association, "I have known of cases where well-run business campaigns have completely changed the characteristics of the load curve of a utility, and enabled that utility consistently and continuously to reduce its rates for service. If you investigate, you will usually find that the utilities with the best advertising programs and the best business getting plans and organization are usually those who always pay their dividends, and whose rates are ordinarily lower than the average rates for service."

"You Can Do It Better With Gas"

There is practically no competition with the local electric light and power company. Outdone in the field of illumination, the gas company can ever revert to its slogan, "You can do it better with gas." It is a sound selling point and the basic truth of most industrial work. Gas for refrigeration is another of many fields open to exploitation, and though the small town industrial field is limited, the enterprising manager can find plenty of cause for advertising in putting over "heating the home with gas." The lack of industrial outlet gives more time to press domestic heating.

To outline what he should advertise would take more space than this article should run. It is worth while, though, to point out how uses of gas have attracted readers' attentions.

One company has told of gas installations in the local hospital, hotel, foundry, and college. Each is the subject of an advertisement, the latter splendidly captioned "Wowser College Teaches Better Cooking on Gas Appliances." Cooking with gas is a subject that can be used indefinitely and in an ever-changing method, while the industrial background is good reason-why copy.

Probably the simplest kind of advertising is the "fact" style of copy. Usually, the advertising writer in search for a copy idea forgets that the public, which is not as close to the industry as he is, is unfamiliar with the simple facts of the business. If he would but jot down a dozen facts incident to the daily functioning of the business—how a meter works, why meters are accurate, the purpose of the holder, how to read a meter—any number of educational items—he will have a copy theme that will be of far greater value than the highly dramatized subject about the romance of the industry. And it will be so much easier to write, to say nothing of to read.

The local resident can visualize much more easily the peak problem of the plant when he reads that "45,000 cubic feet of gas were necessary to cook the Thanksgiving turkeys yesterday" than if he read a flowery-worded advertisement to the effect that the gas industry manufactures 60,000,000 cubic feet of gas a day (or whatever it is). It is hard to visualize a million. It is harder to viualize generalities. Local color has a much greater kick.

Unfortunately, the manager has not been trained in advertising work. Obviously he hasn't the time for even a short-course of instruction. His must be to absorb as he goes, picking up this or that in his readings, the advertising mixed with the production of by-products. For his benefit let us marshall a few more pointers.

A Few Pointers

Get someone to writ the advertising, if possible. Try to get a high school or college student to do it, or ask the newspaper representatives to do it. Try to have someone to do it who can devote his entire attention, at the time of writing, to the writing. The expense is negligible when you figure the time saved by yourself. The practice leads to departmentalization, which the company would enjoy if its business were a little greater.

If a copywriter is not available, and your time is taken up with the operating duties, subscribe for an advertising service such as provided for by the American Gas Association. While these advertisements are necessarily generalized, their quality lies

in their effective presentation. The price is reasonable. Aid is often obtainable from the state committee on public utility information.

Advertising agency service is rarely obtainable in the smaller towns, and even if it is, the retainer fees usually preclude its use.

Figure out an advertising budget and adhere to it as rigidly as possible. A fair estimate may be made for a year's expenditure by appropriating four-fifths of one per cent (.008%) of the previous year's gross income. That this is a fair allowance is evidenced by the fact that the company's turn over, on an average, is once in five years.

Five times .008 equals .04, or 4 per cent which might be compared with the 3 to 5 of gross used by mercantile companies. The larger company can get along on ¾ of 1 per cent, but a fairly large basis is necessary in the smaller company because of over-proportionate expenditures.

This should not include the cost of advertising of appliances. Generally the merchandising of such is done on the campaign method and the unit sales cost is decided and included in the selling price. The consensus is that merchandising should stand on its own feet and its advertising costs should be borne individually.

Split up the appropriation into several items. For example, if the previous year's gross was $100,000, the budget would be eight-tenths of one per cent or $800. Then allow, say 60 per cent of that for newspaper advertising, some for direct mail, some for production, some for billboard, etc.

Newspaper	60%	$480
Billboard	10%	80
Direct Mail	10%	80
Production	5%	40
Miscellaneous	5%	40
Reserve	10%	80
		$800

Do not forget production costs, which include the cost of art work, engraving and the like. Many advertisers neglect these items only to find them added to the cost and overrunning the appropriation. A reserve is always welcome when contingencies arise, and I have never yet seen a year when the most unexpected did not occur.

This allocation of expense may be made as best fitted to the local uses of advertising, but it should be all inclusive.

The salary of the advertising man, or his proportionate share has not been included. As the appropriation becomes larger and as the specialization of duties becomes more pronounced, the salary item should be included.

Where the attention of the reader must be attracted, large space used less frequently is more effective than small space used more frequently. As previously mentioned, the size of the small town paper being limited, the attention is not so hard to obtain, hence smaller space can be used.

Use illustrations as frequently as possible. A small picture attracts attention, tells more than hundreds of words, and is an ideal way to help the reader visualize.

These are but a few phases of general utility advertising practice adapted to the small town company. The educational advantages sponsored by the industry through the Public Utilities Advertising Association are becoming increasingly opportune for smaller companies. There is no reason why the small company's good name and good-will cannot be merchandised as successfully as its labor-saving appliances if the manager will but follow the path prepared by the larger companies in advertising thought and practice.

But there still remain—too many irons in the fire.

(Continued from page 54)

told the operator just how successful he was in eliminating this loss. Experience has shown that the use of a hard coal is best for this purpose, and it was also found that a certain amount of coke was required for filling the generators after the ash had been cleaned out of them. Of this quantity of coke a certain proportion is recovered from the operation and the rest must therefore come from the outside.

Calculations were also made to determine the cost of the various gases made by this process. In the old process the question always arose as to what to do with the coke produced in the manufacture of coal gas, and also what price to charge for it. The author correctly states that this condition has faced every gas works manufacturing coal gas and not having a large enough water gas plant to take care of all the gas coke produced.

Conclusion

In conclusion the author states that complete gasification by the Rincker process is feasible. The sureness of the operation is gratifying. On the other hand the gas yield is not what has been claimed for the process. Furthermore most coals must be mixed with a considerable amount of coke before they can be used in this process. Discontinuous operation of the set is easy to carry out but the yields are from fifteen to twenty per cent lower than in continuous operation. The process is advantageous in that water gas of good quality can be produced in the generators. It is felt that the use of the apparatus for this purpose instead of for complete gasification is advantageous due to the avoidance of loss of volatile matter caused by smoking and also because of the uniformity of the operation. On the other hand when the apparatus is used for complete gasification the amount of coke breeze formed is small.

As The Journal Views It

TO RELIEVE THE CARKING GRIPE OF NEED

To our mind the subject of thrift is just about as trite and hackneyed a one as can be imagined. High school hopefuls have harangued over its long suffering but highly resilient carcass time out of number in their debating societies. Undersized, undernourished sabbath school habitues have laboriously penned tabloid sermons on the subject in a frantic effort to annex a five pointed silver plated medal as a reward. Nay, it has in the passing centuries built around the stolid Benjamin Franklin an aura or atmosphere that has just about clinched for "Poor Richard" the title of Patron Saint of the Anti-Spendthrift Association. The Teutonic peoples, to say nothing of the Scotch, have from remote ages used it as a silent pass word in their economic dealings. And it is a thundering pity that we in America have been so tardy and niggardly by way of flaunting this inescapable condition—thrift—which must be met and reckoned with in order that economic security might be attained.

For we have bulldozed, battered and kicked our victim about. Witness the depletion of our timber lands, the throwing open of our hard earned heritage to the incompetent immigrant from Europe, our dreadfully expensive way of transacting business, our positively atrocious and ill mannered striving after magnitude and volume as against quality and worthiness. But our erstwhile victim will come back; you may depend upon it. He has always come back and he collects his toll in full. His bills must be paid. Do not deceive yourself. The more he is buffeted on the side of the head, the more evil will be the day of reckoning.

Many economists are wondering whether or no we have just about reached the point, where Mr. Thrift is picking himself up, brushing the dust of extravagance from his clothes, adjusting his glasses and fishing into his pocket for the bill—to be paid in full. Quite fortunately there are some individuals and industries who have been and are still laying aside their stipend, as it were, in anticipation of any sudden presentation of a bill—to be paid in full. But to these there will be no precipitate demand for settlement; their score is even at the end of each year.

Happily the gas industry is among the favored few who could survive to the final heat in any competition for a five pointed medal—silver plated or otherwise. Their idea of thrift is both far reaching and profound. For, mark you, are they not only practising thrift but at the same time spreading the gospel of saving and economy amongst their customers? The coming week is "thrift week." It is opportune, it is worthwhile. It might be construed as a milestone along the highway to economic security. The American Gas Journal is "for it; lock, stock and barrel."

If the departed have any cognizance of present day doings on this globe one might well fancy that substantial and lovable old patron saint of the thrifty, solid old Ben Franklin. passing some such remark as "Thrift is a worthy physic to relieve the carking gripe of need."

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NATURAL GAS AS A "PINCH HITTER"

Natural gas, at times, shows a most pernicious faculty for reneging and playing out. At such times the artificial product has acted in a "pinch-hitting" capacity with an average well up toward the top. It would be a wonderful situation if natural gas were virtually inexhaustible. Then all the gas man would ever have to worry about would be problems of distribution.

It is noted in a news article that the City of New Orleans is contemplating bringing into their territory natural gas. Here then we might say that the natural product is "pinch hitting" for the manufactured. It is seldom that natural gas is resorted to in order to augment the supply of manufactured gas. At all events, all sides of the question should be taken into consideration, which the local company in the Crescent City is undoubtedly doing, and no effort spared to be on the safe side in the event the "pinch hitter" suddenly develops bad eyesight or a "charley horse."

*Organized Sales Plans an Important Factor in the Gas Industry

IN the last few weeks I have been hurled into the gas business, never dreaming that I should absorb so much gas as I have had to do. To an advertising man, the gas industry is a tremendously interesting one. Advertising men feel that the subject of advertising sales work for public utility corporations has in spots been neglected. Their opinion on that subject is, of course, subject to considerable scrutiny. I am rather loath myself, as an advertising man, to question the operations of any line of business until I have had the privilege of knowing considerable about it.

Public service corporations are regarded in the advertising fraternity as sometimes overlooking their opportunities. It is true that public utility industries, by their very nature, have an extra grip upon the public whom they serve, and their work of selling is virtually half done for them. Advertising men often wonder if the public utility companies take full advantage of the opportunities to stimulate and further sales which they have acquired by the very nature of their existence. As forming a sort of background to some things I would like to say to you I will discuss for just a moment the various ways and means public utility companies handle their publicity work.

How Various Public Utility Companies Handle Publicity

Let us turn our minds to the railroads, the transportation companies, the lighting companies, the telephone service. Their actual movements and accomplishments and points of view for attacking the public, their detailed methods of getting action or failing to get action, form a very interesting picture or background for your own consideration of your sales work.

Take the railroads. We might say that so far as our detailed observation goes their promotion work or sales work lies largely in the printing of their time tables and the occasional issuance of bulletins relative to excursions. But the railroads go further than that; they have their capably organized publicity departments, and I can tell you their organization for promotion work takes advantage of everything in the way of purchasing power that the public possesses.

In the case of telephone companies, we are very familiar with what they do. They delve into the field of good-will promotion. Their magazine campaigns are familiar to all of us. Their particular appeals to the public are strong, and if you analyze those appeals you will find they touch upon two important subjects. One is satisfying the public as to the occasional necessity of unsatisfactory service. Their advertisements, carefully analyzed, will show they very clearly anticipate complaints of service and, by explaining how these things may happen in their local organization, prepare the public for any inconvenience which may arise.

The other broad division of the telephone companies' publicity work is in the direction of actual, affirmative creation of new business. Everyone of us has found at times when the telephone service or at least the extension of it has seemed inadequate Therefore the telephone company might be judged to be inconsistent in encouraging the public to buy additional service. They are shrewdly anticipating this and making use of a principle in publicity work that is valuable and it is this: Don't confine your publicity work and your sales work to the conditions as they exist today, but lay the broad foundation for the future!

The gas industry has the means to exploit its methods of operations, conditions of economic structure, opportunities for increased success that certainly equal those of the other large public service corporations I have mentioned. It is far from my desire to stand here this evening and say or even hint that the gas industry does not take full advantage of its opportunities. It would be a particularly difficult thing to say to this body of men. Many of you represent the business-getting departments of the industry. Many of you are either executives or close to the elbows of the executives who determine the merchandising policies and advertising policies and who also determine the extension of the service.

Gas Industry Occupies Advantageous Position

The gas industry, as such, has a particular advantageous position as a general merchandising proposition, because you not only manufacture a basic commodity, namely gas, but you also manufacture the appliances by which your basic commodity is used to the advantage of the public. A public service corporation has been defined as one that essentially contributes to the convenience and safety of the public, and certainly the gas business does that. So you have what in ordinary business would be regarded as an extremely favorable set of conditions.

You have your basic product; you have the mechanical devices for consuming that product, and you have one other thing—which is wonderfully brilliant competition. Around 1812, when the first gas company was started in Baltimore, you had no competition. At that time gas was used exclusively as an illuminant, and the public's point of view was at first adverse. Even scientific men predicted a dire future for this very hazardous business of carrying gas through pipes into the homes to be used as an illuminant.

(Continued on page 66)

*A talk given by Eugene M. Weeks, Merchandising Director of Atlantic Printing Co. to the Gas Sales Division, New England Gas Assocation, December 10th, 1926.

INDUSTRIAL GAS LESSONS

IF IT'S DONE WITH HEAT — YOU CAN DO IT BETTER WITH GAS

Lesson No. 152

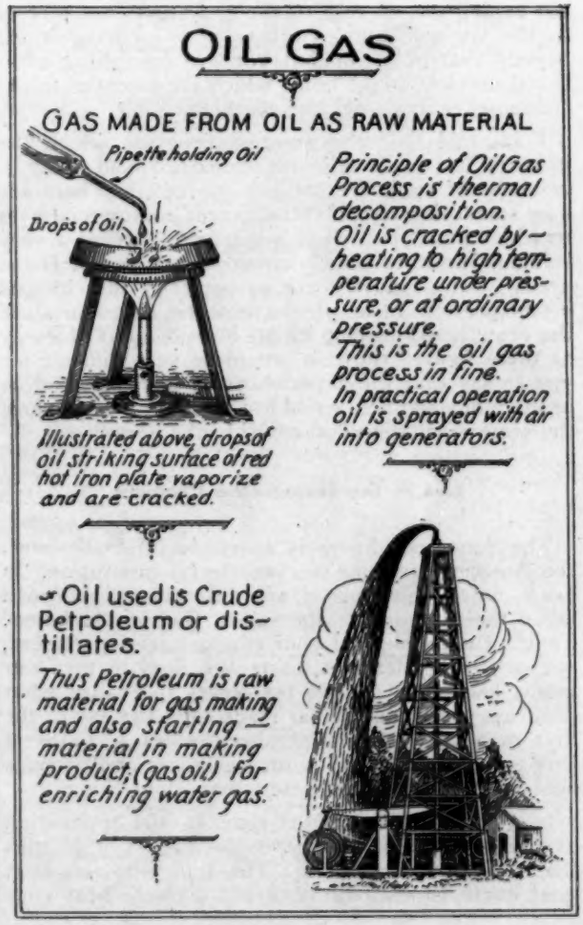
Oil Gas

Oil gas is the least important of the manufactured central station gases. As the name indicates, the raw material employed in the manufacture of oil gas is oil. This oil is obtained from petroleum. Various petroleum products, possessing the proper properties as well as crude petroleum, are used in the manufacture of oil gas. In general character the oil gas process is a thermal decomposition, or, as it is commonly known in the oil industry, a cracking operation. This simply means that the constituents of the oil, which are hydrocarbons of high molecular weight, are cracked or decomposed in the heating process to produce stable vapors and gases possessing considerable thermal value.

The composition of oil gas is very much like that of coal gas. Its manufacture, however, is by no means so well distributed, for the reason that in most localities in this country coal is a far cheaper raw material from which to make gas than oil. However, in certain locations, particularly along the Pacific Coast where coal and coke are quite scarce, oil gas is largely made from oils that are mined in those regions.

Two Principal Processes

There are in all, two principal processes which are employed in the manufacture of oil gas. One of these is the checkerwork process, of which the Jones process is an example, and the other is the Dayton process, which is used only in very small plants. In the Jones process the oil gas generators are filled with checkerbrick, which is first heated to the proper temperature by the combustion of a mixture of oil-spray and air. Then the mixture of oil and steam is passed through the machine. On the other hand, the heat that is required for the formation of oil gas in the Dayton generator is supplied by the combustion of a part of the oil inside a gas-making retort.


OIL GAS
GAS MADE FROM OIL AS RAW MATERIAL
Pipette holding Oil
Drops of Oil
Illustrated above, drops of oil striking surface of red hot iron plate vaporize and are cracked.
Principle of Oil Gas Process is thermal decomposition.
Oil is cracked by — heating to high temperature under pressure, or at ordinary pressure.
This is the oil gas process in fine.
In practical operation oil is sprayed with air into generators.
Oil used is Crude Petroleum or distillates.
Thus Petroleum is raw material for gas making and also starting — material in making product, (gas oil) for enriching water gas.

(Continued from page 64)

Chart Showing Growth of Gas Business

I was very much interested recently in seeing a chart showing the growth of the gas business. For a period of about 45 years or 50 years the red line indicating the annual amount of cubic feet of gas consumed nationally ran slightly above the bottom of the chart, almost horizontally. Then the line began to turn upwards, and the point at which it began to turn upwards was when your competition began. The electric industry began to consider itself as a militant colleague of the gas business. Presently the red line indicating the annual gas consumption began to run almost at right angles to the former horizontal line, and that was when the electric industry began to make its thrusts at the gas industry. The gas companies have continued to increase their output in spite of the competition of electricity for lighting!

Advertising men are of the opinion that possibly you have not taken full advantage of certain factors in your business, which should be seized upon as tremendous advantages. Take the appliance end of your business. Your work as an industry has ceased to be merely furnishing a basic commodity. You are not selling gas merely to the gas stove, not merely to the water heater; you are now carrying it far beyond that point, in that you are furnishing additional services to the home which are essential to the convenience and safety of the home.

I am told that the greatest progress which the industry has made is in the industrial field; that is, in terms of cubic feet of gas consumed. There are now something like 25,000 different commercial uses to which gas is put. If this is true, it teaches a very valuable lesson to your commercial managers. If the needs of the industry are so perfectly met by gas in its present form of convenience as to produce the growth and develop its use in so diversified a way as these figures show, it would be very difficult for you to say that the experiences of your sales effort in the industrial field could not assist you to produce the same results in another field—the home.

Gas in the Home—the Problem

The American home is a wonderful institution; the American factory is a wonderful institution. In exact detail their needs are different; in a broad sense their needs are the same. Gas in the home! That is the problem of your commercial department, one of the problems at least. We need to turn our minds back only a very few years to realize what progress your industry has made since the day of the first gas stove. I can remember the first gas stove I ever saw. The ability to turn a faucet and produce heat for cooking, was to me a marvelous thing.

In a comparatively short time, by the application of inventive genius, you have added a list of utilities that constitute a romance. The ability now to heat your home, to heat the water, to cook, to heat your garage, to operate your flat iron, to destroy the refuse and escape carrying it out of doors, and—very shortly, I understand—to operate your refrigerator, constitutes an addition to the development of your business from its old standards, that is little short of marvelous.

It is very important that you analyze your territory the same as any sales manager in any line of business does. It all boils down to the same situation in any business. If you have a good product, you can get the business by striking for it. If there are some problems in your local gas sales department, peculiar to your industry, it would be very difficult for anyone to say that they are unsolvable. It is not a question of these local sales departments reaching our for something that is new to the gas business. It is purely a matter of adapting to your business, the same business principles that are employed in other industries!

The local commercial manager of your companies, as I have seen him, is an extremely important individual. Whether he is so regarded by your industry I do not know, but if the job of sales promotion and advertising is essential to the development of your business and is worth the cost of the department, then your local commercial man is a key man. In the first place, the quality of salesmanship he employs will either gain the maximum of results or will remain at a point of mediocrity.

Must Pick Salesmen With Care

Your local sales manager should be a man of fairly good experience in the processes of good sales work; he should be somewhat of a psychologist and he must be an energetic man. If he is to get the maximum results from his salesmen, he must pick them with much thought and care. He can't take the youngster from the stock room or the office "hot" and put him out and expect him to make a good salesman. The salesman himself must have inspiration and know how to approach the different kinds of people. The local salesman must be more than a door-bell ringer. He must be an intelligent man in his approach on the householder with a plan to extend the use of gas. He must be neat in appearance.

The field for improvement in your business through the use of appliances is very large. With the array of practical, useful appliances that you now take to the house owner, the attractive appeal that they make to him in the way of further comforts to his home, the ease with which he can obtain them—there is no reason why the development of that end of your business should not be made doubly valuable.

I had the pleasure the other day of meeting one of your commercial managers, and it is easy to see why he has been successful. He has analyzed the possibilities of sales promotion. He has produced not a marvelous, intricate plan, but a real he-man plan of getting business. He believes that the object

(Continued on page 68)

GAS MERCHANDISING

Domestic – Industrial

Ideas for the Man Who Sells

William H. Matlack

"WAY DOWN SOUTH IN GEORGIA"

The Georgia Railway & Power Co., Atlanta, puts a pun and a picture in their latest advertising. Their advertising man has sensed the popular demand for a little more color and comedy in advertising and has built an advertisement that will attract attention. be read and bring home some homely facts that will no doubt sell some gas room heaters, the enemies of chills and discomfort.

WHAT SHALL I PLAY - DAD - "THE MINT FREEZE?"
WHAT IS WRONG With This Picture
The answer is two words meaning a certain modern convenience that warms chilly rooms. The first word has three letters and the second word is hyphenated. The picture lacks that modern convenience.
For each correct answer accompanied by the price we will deliver a
GAS ROOM-HEATER
Enemy of Chills and Discomfort
GAS RADIANTFIRES
Heat Like the Sun
Throw the heat rays straight out into the room. Made in many beautiful period models.
GAS STEAM RADIATORS
Instant Steam Heat
Strike a match and light Use one radiator or all. Most flexible heating system.
Come In and See Our Big Display
GEORGIA RAILWAY & POWER CO.
Retail Stores:
ATLANTA—75 Marietta St.
DECATUR—136 Sycamore St.

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THE THINKER

The gas man who wants to do his share to make and exceed the increased sale of gas in 1926 will have to start thinking and planning early in January if he has not already done so. Think and plan and the increase will be more than met. Some folks have said that gas is dead. Let's prove that we are alive in twenty-seven. Plan your work and work your plan and advertise consistently.

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A LITTLE CARD GOES A GREAT WAY

Here is a little card that is used by the gas company down in Augusta, Georgia, that may hold an idea for some of the Journal readers. Frequently customers complain that they made request for a service man to call at their homes and "none came" this little card will eliminate that sort of telephone business and also build up customer good-will. It will show that the company was on the job and that the customer was not, this too will have the effect of cutting down calls for service men for many trivial reasons that occur in the customer's mind.

NOTICE

Date_____

Name_____

Address_____ Floor_____

Our Representative called today at_____a.m._____p.m. subject to your order, but could not get in. Kindly notify us when to call again.

Respectfully, THE GAS LIGHT CO. of Augusta

Phone 222 By_____

(Continued from page 66)

of his company is to sell gas! There is a whole sermon in that. The way to sell more gas is to make gas logical and attractive to the gas-users and non-users.

Sales Effort Must Be Continuous

In order to show a profit all salesmen must have work the year around. Sales effort must be continuous. This man's promotion department includes all of your newest equipment, and in conversation with him I found that his department does give systematic and individual attention to pushing the sale of all these articles—ranges, heaters, laundry equipment and refrigerators.

And the creation and maintenance of the public's general good-will toward the local gas companies are important. Informative material bearing directly upon the technical progress of gas as a commodity and the appliances by which it is conveniently and profitably used has a logical place in local promotion work. Among the several excellent methods for accompishing this good-will work is the magazine, Everyday, which the New England Gas Association is about to launch.

This monthly publication can be made a most valuable influence for letting the public know that there is a great deal more to the gas business than merely collection of rather unattractive mechanical plants that we pass by here and there in the train or the motor car. Everyday is to touch lightly and pleasantly upon gas in the home, and at the same time give its readers a large amount of interesting and entertaining matter that is carefully and excellently prepared.

Your job is, after all, no different in a national way, no different in a local way. than any other job of intelligent selling.

Don't under any circumstances minimize your ability to make the appliance sell the gas, and don't fail to take your just profit on both ends!

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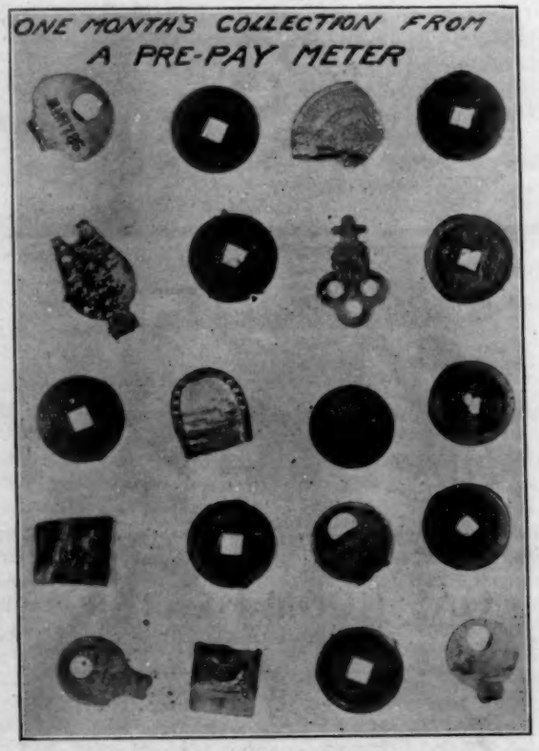
TREAT THE GAS METER LIKE A CASH REGISTER

R. E. Pierce

THE early gas men maintained that a gas company's money was either made or lost in the retort house, but conditions have so changed things that today a gas company's money is made or lost in the distribution department. One of the most important phases of this department is the connecting, disconnecting and the maintenance of the gas meters. The gas meter is the gas company's scales or cash register and it should be treated as such. Every gas man knows that as a measuring machine the gas meter has an excellent record for accuracy comparable to any other measuring device in commercial use.

A gas meter represents a considerable sum of money and every precaution must be taken to prevent the waste or loss of this money from damage to the meter. Meters should be set level and plumb, properly supported with no part of the case touching any cement, brick or stone wall. Lead connections are not as desirable as formerly; they kink very easily and a flattened lead meter connection has been the cause of not a few complaints of poor pressure.



Meters Should Be Installed Where Accessible

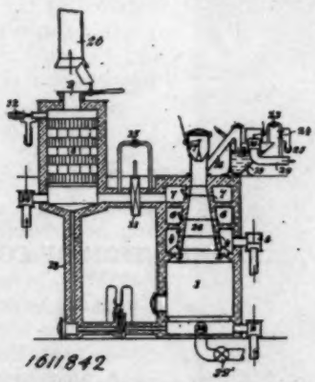
For the convenience of the meter reader, meters should be installed where they will be easily accessible and conveniently read.

The truck which transports the meters from the shop should be fitted up with a rack to prevent damage to the meters in transit. Do not treat this piece of mechanism as if it was but a tin case. The accompanying photograph is not a display of models. It is just a collection of relics taken from a prepay meter. It is surely a rare collection and includes Chinese coins, keys, spoon handles, tobacco and milk checks.

PROGRESS IN GAS TECHNOLOGY
Domestic and Foreign

COMPLETE GASIFICATION OF COAL

GAS, which is composed of both water gas and coal gas, is made in the apparatus shown in the accompanying illustration. A bed of incandescent coke is maintained in the gas generating chamber 1 and a layer of soft coal is superimposed thereon and is in immediate contact with it. Air is blown through the incandescent coke to form producer or blast gas and a part of the latter, at least, is burnt in the flues, shown at 4, 6 and 8, surrounding the distillation chamber 16. Steam enters at 5 and passes through these flues and is thus superheated and this steam then enters at 3 at the junction point of the distillation chamber and the gas generating chamber.



The steam is passed through the mass of fuel in the distillation chamber and, at the same time, superheated steam at about the bottom of the incandescent coke in the gas generating chamber. These steps in the process are repeated alternately. The resulting mixture of water gas and coal gas is drawn off and the fuel supply is replenished. United States Patent No. 1,611,842.

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ASH IN COAL AND EFFECT ON CARBONIZATION

SPECIAL cokes were made by adding five per cent of silica, alumina, lime and ferric oxide and equivalent quantities of calcium carbonate and sodium carbonate to separate portions of a coal containing less than one per cent of ash. The behavior of these cokes at a temperature of 1,000 degrees C on gasification in steam at rates of one to twenty-one liters per hour was compared with that of the "pure" coke. The additions of silica, alumina and fireclay gave similar results to the "pure" coke, but the calcium oxide, ferric oxide and sodium carbonate showed a marked increase in reactivity.

At ten liters per hour the steam decomposed was sixty-one per cent for the "pure" coke, 82 per cent, 91 per cent, 98 per cent for the calcium oxide, ferric oxide and sodium carbonates cokes, respectively, while the corresponding percentages of carbon dioxide in the water gas made were 9.2, 5.4, 2.6 and 0.4 respectively.

Additions of one to five per cent of iron oxide and half a per cent of sodium oxide, as sodium carbonate, also gave increased gasification. It was deduced from the increased reactivity obtained by impregnating a portion of the "pure" coke with sodium carbonate solution that the reactivity is chiefly due to a specific catalytic effect of the added compound and not to the alteration in physical structure on carbonization resulting from the addition. Similar increases in reactivity were observed at 850 degrees C using carbon dioxide; the percentages of carbon monoxide for the same rate of carbon dioxide were 6.6, 29.9, 45.6 and 89.0 for the "pure," iron oxide, calcium oxide and sodium carbonate cokes, respectively. Gas Journal, 175, 882-891.

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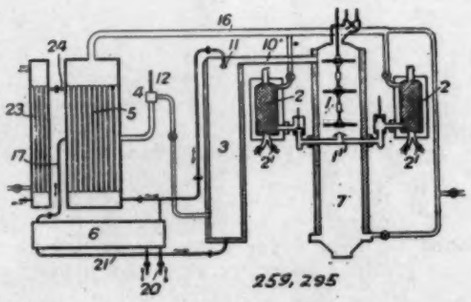
LOW TEMPERATURE DISTILLATION

IN distilling coal and like carbonaceous materials superheated steam at about 650 degrees C is passed through the charge and the dirty steam after use is sprayed with hot water and its remaining heat used in the generation of clean steam for use



in the process. Steam is passed from a pipe 16 into one of two superheaters 2 where it is heated to about 650 degrees C and passes by a pipe 1^1 into a retort 1, producer gas and air passing through valves 2^1 into and being burned in the other superheater. The steam charged with volatiles from the retort 1 passes by a pipe 10 into a scrubber 3 having a hot water spray 11. Steam from the scrubber passes into a compressor 4 supplied with high pressure steam from pipe 12 and the mixed steam passes to a heat exchanger 5 in which hot water from an economizer 6 is evaporated to form steam which passes by pipe

16 to the retort, a part traversing the hot coke in chamber 7 where it is heated while cooling the coke. Gases evolved with the dirty steam together with some steam passes by pipe 24 to a condenser 23. Condensed steam enters the economizer by a pipe 17, clean water enters by pipe 20 and condensates from the scrubber 3 by a pipe 21. British Patent No. 259,295.

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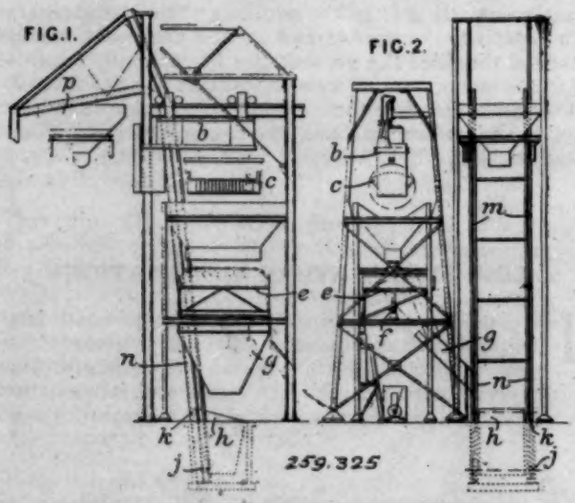
QUENCHING COKE

APPARATUS for quenching and conveying away hot coke discharged from retorts comprises a small quenching bench e of capacity equal to that of the coke skip c and tiltably mounted at f so that the coke may be discharged, after quenching, into a chute g delivering to an elevator bucket h. The latter is provided with wheels j, k, running



respectively on rails m, and in channel guildes n bent over at the upper end so that the bucket h discharges into a measuring hopper p from which the coke may be conveyed away for screening or disposal. The various operations may be controlled by automatic electric means or may be under the control of the attendant on the telpher b carrying the skip c. In a modified construction a fixed quenching bench e is provided with discharge gates which deliver the coke directly into a receiver carried by a hoist and adapted to serve as a measuring hopper. British Patent No. 259,325.

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WHAT GAS DOES

The change from coal fuel to gas has transformed the roasting room of a large New York coffee house from a stifling, smoky "furnace room" where four men toiled and sweated and drew four pay envelopes every week, to a comfortable, roomy, well-ventilated factory department operated by one man chosen for his proficiency in the art of roasting coffee rather than for his brawn.

IMPROVED COAL CARBONIZATION METHOD

FRENCH Patent No. 595,762 describes an improvement in the carbonization of coal and other combustibles.

Finely pulverized coal is introduced in the upper part of a vertical retort. This coal meets an ascending stream of combustible heat gases. The temperature of this gas is proportional to the speed at which the pulverized coal falls in the retort, and this relationship is maintained in such a fashion that the coal is carbonized at a temperature not exceeding 800 degrees C. and preferably around a temperature of 650 degrees C. The volatile products which are obtained in the carbonization process are recovered in the upper portion of the retort and the carbonized residue in the lower part of the retort.

The apparatus consists of quite a tall vertical retort which is provided with a jacket. The latter acts as an insulator for the retort and the volatile products circulate within its interior. There are also provided an annular dust collector, installed at the lower end of the jacket as well as an outlet for removing the gas out of the apparatus and the volatile products and an inlet for charging the pulverized coal.

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SLOW CARBONIZATION OF COAL

CHAMBER furnaces are used for this purpose and are arranged in batteries.

One or more of the lateral walls of the chambers are movable and can be manipulated either individually or in groups. The lower closure is obtained by means of movable doors. The gas escapes through the lateral walls. The lateral carbonization chambers are closed by an arrangement which is used for retaining the tar. Above the chambers are found the heating hoppers, the cubical contents of which correspond to the chambers, and the arrangement is made in such a manner that two chambers can be fed by the same hopper. The fuel treated is led into a space where the pressure is greater or equal to that of the gas which is evolved from it.

After being introduced into chambers, the fuels are compressed by means of a movable wall. Heating gases are then introduced into the closed chambers in order to prevent penetration of gas produced by carbonization. During the heating period it is also possible to introduce steam in order to cool the coke that is produced from the coal. This steam is produced by quenching residual coke by spraying it with a quantity of water at the time that it is removed from the chambers. At that point its temperature is of course greater than that of the boiling point of water. The fuel is first carbonized slowly, then converted into coke, and the gaseous products obtained during the two periods of the process are removed separately. French Patent No. 602,946.

First Impressions

by

Sir Toby Belch

A goodly number of years ago, down Virginia way, it was the custom to set aside a certain afternoon, along about the fore part of June, and occupy the same in a pilgrimage to the county poor house. I was once lugged, at the age of eleven, much against my desires, on such a trek.

I can still recall the ancient darkey, fearsomely "slung together," anatomically speaking, who strained mightily at opening the shambles of a gate, a portal that wheezed and groaned as it labored back on one rusty hinge. Notwithstanding my youth, an age when fancy and imagination mercifully paints everything in rosy hues, I can still vividly recall the forbidding aspect of the yard running riot with rank vegetation; s a g g i n g eaves, with the spouting long since crumbled and decayed to but a threadbare shadow of its former self, and the unspeakably filthy window panes with here and there a hazy, gaunt face peering out.

I do not believe that artists ever go to the poor house, that is, voluntarily, else they would perforce take a hand at sprucing the place up a bit. At all events I remember to this day my first impression of a habitation for the hapless and indigent. It has left a bad impression or rather taste in my mouth. I do not care to visit one again on a trip of inspection, nor from necessity, for that matter.

Today there is an intense striving after the creating of a good first impression, that is, by some individuals. The results are more than worth the effort. Well decorated windows draw into the store the desired quota of prospects. The well depicted collar on a dashing "Collegiate" pipes the "yokelry," as in Hamelin of olden times, into the state of mind which virtually forces them to invest in the replica of the bit of haberdashery shown in the street car ad. The well arranged cover on a magazine, trade paper or what not, ofttimes leads one to turn to the inside and explore further. Which brings us, in a sense, to the cut shown herewith and the "raison d'etre" for this article.

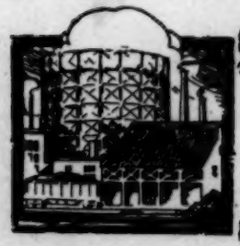
In our estimation this is a good cover, better still, it is an excellent cover and it's a safe wager that each month those on the mailing list of "This and That in Gas Land" look forward to its receipt for a reason aside from what they might expect to find in the innards of the publication.

Nowadays the reading public as a whole is castigated most outrageously by way of having to stomach a lot of ill-designed, art-nauseating front covers put out by various publications. How on earth they expect the reading public to delve further in to such grotesquely clad editions is a question that encompasses a goodly bit of territory.

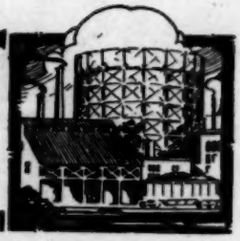
Attractive covers are not so difficult to get. Generally all that is needed is some one in an editorial capacity who has a modicum of artistic appreciation. It is true that in some few cases there is no one in the organization capable of rendering a good drawing to be used in the make-up of the front cover. However this is but a decrepit excuse for turning out anything that is not quite "up-to-scratch." There is generally always available some art student in the town who can render a tolerably artistic drawing and a few dollars will atone or make up for whatever might be lacking in the philanthropic aspect of his make-up.

At any rate the front cover shown on this page is an excellent one and in the passing it might be well to mention that there are a number of such among the various similar publications throughout the country.

Whoever said that first impressions are generally of a lasting nature said something that weighs all of a ton.



NEWS OF THE GAS INDUSTRY



Finds Utilities in Public Favor

Insull Says This Enabled Record Expansion—Favors New Rate Form—Industry Seeks Greater Use of Current and Gas in Home

By Martin J. Insull

President Middle West Utilities Company

New York.—In discussing the present condition and probable development in the immediate future of the public utility industry it is desirable that utility operators, investors and customers appreciate that this business must be conducted and developed in accordance with the same economic principles as any other successful business.

During the last few years, with easy financial conditions prevailing and with a favorable public attitude toward the industry as a whole, expansion has been without precedent. Not only has this resulted in large construction programs in most companies but it has permitted substantial consolidations and purchases.

Growth in income through lowered operating expenses or increased earning has not in some instances kept pace with growth in capital investment. The physical growth of the industry cannot be said to have reached a position of relative stability, if such a thing were possible. Whether this unprecedented rate of expansion will continue during the coming years will depend upon financial conditions, service demands, economies to be obtained and in a large measure the practical application of the principles which have proved successful in developing any well-balanced business.

Overbuilding Dangers

There is a present danger of overbuilding generating and transmission facilities, especially in some individual or isolated situations where anticipated growth may not be realized. Generally speaking, conditions have been the reverse in that by the time an expansion program has been completed the growing demand has necessitated further enlargements.

It is analogous to the corn crop situation; one year too much corn and the next year too many hogs. It is difficult to keep facilities closely balanced to demand and still provide adequate capacity for the public. In order to develop some situations economically it is frequently necessary to build for future requirements. Certainly with such a small part of the population as yet enjoying full benefits of these services and with such a large potential demand by manufacturing industries, railroads, farms, residences and general business, it is reasonable to expect that expansion will continue.

* * *

Gas Service Unharmed

Nashville.—No broken gas mains or trouble of any kind has been reported to the Nashville Gas and Heating Company on any of its lines. The slight trouble at First and Spring streets on Monday was replaced with a temporary connection. Users of gas in Nashville will find no letup in their service on account of the flood, the gas company announced.

Coke users will also find no obstacle in their way of obtaining coke for fuel as the Nashville Gas and Heating Company coke supply is still in good shape, though part of it has been covered with water. The company announced that it was making deliveries of coke to any part of the city.

Gas Consumption Sets Mark

Los Angeles.—More than an eighth of a billion—147,055,000—cubic feet of gas was supplied December 23 by the Los Angeles Gas and Electric Corporation to its consumers on that day of hail, rain, snow and unusual cold. This is by far the largest single day's send-out of gas ever experienced by the utility company, and is the second time this month that the record has been broken. On December 8 the mark of 111,415,000 cubic feet was made, which eclipsed the previous record of 105,498,000 cubic feet on December 24, 1924.

Only eight times in its history has the company reached or passed the 100,000,000 cubic foot mark, and five of these have been in December of this year. In fact, so heavy has been the demand for gas that the gas sendout for December, 1926, will equal that for the entire year of 1909.

* * *

NEW GAS TANK COMPLETED

Container on Court Street Has Capacity of 3,000,000 Cubic Feet —Cost $250,000

Binghamton.—The large new gas tank at the Binghamton Gas Works plant on upper Court street has been completed by the contractors, the Bartlett-Hayward Co. of Baltimore, Md., and turned over to the company. The gas from this tank was recently turned into the city mains for consumption by Binghamton and Johnson City patrons.

According to Charles E. Bennett, vice-president and general manager, the Binghamton Gas Works plant equipment now is sufficient to provide for service for many years to come in Binghamton, Port Dickinson, Johnson City, Endicott and the entire town of Union, if franchises in the latter should be approved.

Conditional Increase of 8 Per Cent Asked By Gas Company

Naperville, Ill.—Gas rates in DuPage county may be increased 8 per cent should certain legal proceedings now before the Illinois Commerce Commission be carried out. If the increase in thermal gas heat units is raised by the commerce commission from 480 to 550, the Western United Gas and Electric Company has asked for an increase in rates of 8 per cent. The petition for increase in rates was entered by the gas company following the notice of an order for the increase in heat value to domestic consumers.

The hearing was opened before the commerce commission recently and the matter has not yet been decided. No final orders so far have been issued, and there will be none unless so ordered by the commission.

* * *

Health Department Cautions Against Defective Piping Following Fatalities

Philadelphia.—Sixteen accidental deaths from illuminating gas within two weeks led the Department of Public Health to issue a warning to housewives against using gas heaters or other apparatus without first carefully inspecting them.

"The recent cold spell may be regarded as a contributory factor," Dr. Wilmer Krusen, director of the department, declared in explaining the cause of the large number of fatalities. "Many persons utilized gas heaters to heat their bedrooms and living rooms in order to protect themselves from the cold.

"Inasmuch as we expect more spells of extreme cold weather, we sound a warning to the public to inspect carefully all heating devices requiring the use of gas with a view of having defects in gas stoves corrected and all tubing and pipe connections adjusted to prevent leaks. Special attention should be paid to rubber tubing connections which are likely to crack and permit small amounts of gas to escape.

"The odor of illuminating gas in the room should require prompt inspection, as there is a certainty that the stove is defective or that there are loose connections, or that the piping needs to be renewed.

"Special inspection should be made of the kitchen stove, where small leaks in the cocks or connection may seriously impair the health of the housewife, cook or others who must remain in the kitchen for long periods of time during the day. Pilots of kitchen ranges and water heaters should be inspected from time to time as gusts of wind on opening doors may blow out the small lights. It is a safe plan to turn off the gas of all heating apparatus in the bedroom before retiring.

"We mention this because persons will often stumble over gas hose connections unknowingly, especially at night in the sleeping room, either on retiring or rising from bed in the darkened room.

"Practically all the accidental deaths by gas poisoning may be avoided if simple precautions are taken in trying out all stoves before they are put into actual use."

* * *

Natural Gas May Be Piped Into Orleans

New Orleans.—An article contained in a recent number of The Lamp, the official house organ of the Standard Oil Company, after discussing the plans and progress of the gas pipe line from the Monroe, Louisiana, field to the Standard Oil refinery at Baton Rouge geared to deliver 100,000,000 cubic feet of gas daily, which is "greatly in excess of the refinery requirements," goes on to say: "The excess gas will be available to the city of Baton Rouge and its industries and for sale there to purchasers for resale and delivery to refineries and sugar mills between Baton Rouge and New Orleans. It is also highly probable that a plan will be worked out whereby those purchasers may take natural gas to New Orleans to mix with and enrich artificial gas for distribution to consumers by the New Orleans Public Service, Inc."

That the Standard Oil is not taking a shot at a highly problematical future with its gas project is plainly shown by its signed contract with one of the gas producing companies which calls for delivery of 40,000,000 cubic feet of gas daily to the Standard Oil for a period of ten years.

Of the Monroe to Baton Rouge pipe line 125 miles already have been laid of a total of 170 miles, and the tube of 22 inches diameter is said to be one of the very largest in the land. The project, including the gas lands that the Interstate Natural Gas Company, Inc., a Standard subsidiary, has purchased, is stated by The Lamp to cost $13,000,000. Of most interest to New Orleans, of course, is the possible stake our city may have, as suggested, in this gas movement.

* * *

Asks Minimum Gas Rate

Newark, N. J.—Representatives of five municipalities voiced no objection at a hearing before the Public Utilities Commission in Newark on the application of the Public Service Gas and Electric Company for establishment of a minimum gas rate of $1 monthly, The Associated Press announced.

Percy S. Young, vice-president of the company, declared it would prefer to discontinue service unless the $1 rate could be obtained. The purpose of the proposed rate, he argued, was to establish an equitable distribution of cost instead of having small users carried along by others.

Many persons, he said, ordered meters installed and then failed to use gas, and in the summer many residences were closed for several months.

The commission took the plea under consideration.

* * *

Natural Gas Industry Is Serving the Users

Canadian, Tex.—An example of signal service to an industry and to people by it is seen in the collection of information on the natural gas industry and the uses of natural gas that has been assembled by the Natural Gas Association of America.

Through exhaustive index systems practically every feature of the production and use of natural gas is made available for the industry and the users of natural gas.

George M. Kirchmer Addresses Laboratory Club

Brooklyn, N. Y.—George M. Kirchmer, general claim agent of The Brooklyn Union Gas Company, addressed the Laboratory Club of the company, at 197 St. James Place, January 3, 1927. He took for his subject, "Am I My Brother's Keeper?"

The speaker declared that every workman was the keeper of the safety of his brother workman. He urged the club members to carry the message of accident prevention, everywhere about the company's property that they went.

He told them that in preventing accidents wherever they went that they were reducing the cost of living, because every accident in the company was taxed upon the industry and the cost ultimately reached the consumer.

The speaker pointed out that accidents caused in the construction of homes in the Borough of Brooklyn, were ultimately charged into the cost of the building and were reflected in the rent of the buildings; that even the clothing that people wore upon their backs was taxed for any accident that might have occurred in the factory producing that clothing.

Mr. Kirchmer then spoke about the application of the Workmen's Compensation Act.

* * *

Gas Heating Discussed At Meet

San Diego.—Forty-eight prominent San Diego architects, plumbers and building contractors met in the basement of the Electric Building yesterday noon, December 22nd, as guests of the San Diego Consolidated Gas & Electric Company, to engage in a general discussion of heating engineering and gas heating in particular.

H. W. Elder, gas appliance expert of the local company, was the first speaker. He emphasized the fact that gas heating was both healthful, reasonable and comfortable, providing the heating appliance was of an approved type and properly installed. Elder told his audience that there absolutely was no danger from heating or cooking with gas, if the appliance is efficient and the room properly ventilated. In closing he stated that in gas appliances, as in any other commodity, you get just what you pay for.

The next speaker, W. L. Hoyt, Pacific Coast sales manager for the American Gas Products Corporation, told of the ever-increasing use of gas generated steam for heating large residences and office buildings. It was his opinion that a heating system should compare in value with the rest of the house, and that an inefficient system detracts from the whole, just as a weak link in a chain.

P. J. Daugherty, heating engineer of the Hoffman Specialty Company, the final speaker, stated that today there is no guesswork in heating engineering. He concluded with a detailed explanation of the Hoffman steam distribution and heating system. Daugherty has been engaged in the study of heating for the past 30 years and is a recognized authority on all modern heating systems.

* * *

G. D. Yeaton Returns to New England

Boston.—Mr. G. D. Yeaton has resigned from the position as industrial engineer of the Southern Gas and Power Corporation to join the Industrial Appliance Company of New England, Boston, Mass., New England representatives of the Bryant Heater and Manufacturing Company, Cleveland, Ohio, manufacturers of the Bryant Gas Fired Boiler and Warm Air Furnaces, advertised under the familiar slogan of "Let the pup be your furnace man."

Mr. C. H. Cummings, manager of the Industrial Appliance Company, reports a rapid increase in his business the past two years and although he has felt the need of a competent assistant, it has been very difficult for him to retain the services of a man which would measure up to his requirements. He feels that with the arrival of Mr. Yeaton he will be able to take care of the increase of business expected in the next few years, and at the same time maintain the efficient sales and engineering service that has always been his practice.

UTILITY EARNINGS

Continental Gas

New York. — Continental Gas and Electric Corporation and subsidiaries report for twelve months ended November 30, 1926, profit after Federal taxes, interest and subsidiary charges of $6,353,998 available for depreciation, amortization and dividends, against profit of $5,123,096 in the preceding twelve months.

Western United Gas

Western United Gas and Electric Company reports for twelve months ended November 30, 1926, gross revenue of $6,701,016, as compared with $5,997,258 in previous twelve months, and net after expenses and taxes $3,057,881, against $2,601,195.

United Light & Power

United Light and Power Company and subsidiaries for twelve months ended November 30, 1926, report consolidated profit after interest, Federal taxes, prior preferred and preferred dividends of subsidiaries of $6,767,190, available for depreciation, amortization and common dividends, against profit of $6,597,559 in the preceding twelve months.

* * *

FLORENCE GAS CO. PLAN EXTENSIONS

Investigate Possibility of Furnishing Darlington With Gas in 1927

Florence, S. C.—The board of directors of the Florence Gas & Fuel Company has recommended to the stockholders an increase in capital from $100,000 to $200,000. This recommendation will be passed upon at a special meeting of the stockholders in January. The proposed increase in capital will enable the company to make improvements to the present plant and to extend the service where practicable to do so. It is reported that investigation is being made into the possibility of furnishing gas to the people of Darlington by the construction of a pipe line from the present plant in Florence and the installation of a system of distributing mains in Darlington.

LACLEDE GAS WILL SEEK NO INCREASE IN SERVICE RATES

$52,260,000 Valuation, Fixed By State, Will Bring 7.1 Per Cent Return

St. Louis.—The Laclede Gas Light Co. will make no application for increase following its agreement with the city to accept the valuation of $52,260,000 which the Public Service Commission placed on its properties November 20, after eight years of litigation and inquiry. This valuation, accepted by the company and the city in a stipulation filed with the commission, gives the company a return of approximately 7.1 per cent on that part of its properties devoted to the production of gas.

C. A. Monroe, chairman of the board of directors of the company and majority stockholder, testified before the commission in contending for a $74,000,000 valuation there was no intention of seeking a rate increase. The present rate is $1 per 1,000 cubic feet for residential consumption and 90 and 80 cents for industrial purposes, based upon volume used.

The city had contended before the commission that a fair value of the properties was $40,000,000.

Present valuation of the company means a great appreciation in the value of its common stock, held largely by Monroe and his associates. It was purchased in a quiet buying campaign by G. H. Walker, New York broker, at prices ranging from $98 to $104. Its value now is estimated at $180 per share.

The profit to common stockholders is about $4,500,000, of which Monroe made about $2,500,000. It generally was accepted in financial and utility circles that the preliminary $30,000,000 valuation of the commission, as of 1921, was too low and the agreement of the city and the company indicates both parties consider the valuation a fair one.

* * *

Merger of Nine Public Utilities in New Jersey Is Contemplated

New York.—A plan for the merger of nine companies operating under long-term leases with the Public Service Electric and Gas Company was presented before the board of public utility commissioners in Newark.

A hearing was given on the company's application for approval of the issuance of $42,060,317 of 6 per cent cumulative preferred stock, 1925 series, to be used in acquiring the stock of the underlying companies.

The merger as planned is the last step in the wide financial program submitted to the shareholders of public service corporation of New Jersey on March 13, 1924.

The companies in the proposed merger are: Essex and Hudson Gas Company, with $6,500,000 of stock outstanding; Hudson County Gas Company, with $10,500,000 of stock outstanding; South Jersey Gas, Electric and Traction Company, with $6,000,000 of stock outstanding; the Gas and Electric Company of Bergen County, with $2,000,000 of stock outstanding; New Brunswick Light, Heat and Power Company, with $400,000 of stock outstanding; Newark Consolidated Gas Company, with $6,000,000 of stock outstanding; the Paterson and Passaic Gas and Electric Company, with $5,000,000 of stock outstanding; Somerset, Union and Middlesex Lighting Company, with $1,050,000 stock outstanding; the Ridgewood Gas Company, with $100,000 of stock outstanding.

Of $37,550,000 outstanding stock of the nine companies, $692,100 is owned by Public Service Electric and Gas Company and $11,400 by Public Service Corporation of New Jersey. The public has the remainder.

Three options were offered:

First, exchange of stock for 6 per cent cumulative preferred stock of Public Service Electric and Gas Company; second, purchase of their stock for cash, and third, exchange for the common stock of Public Service Corporation of New Jersey.

Records for Gas and Electricity

Production in New York State Increased to Huge Figure, Official Reports—Revenues of $314,000,000

New York.—New York State established records in the production of gas and electricity in 1926 Henry M. Brundage, president of the Empire State Gas and Electric Association, reports. He estimates that in the year the production of gas was increased about 11 per cent to 100,500,000,000 cubic feet, and that of electricity 10 per cent to 11,190,000,000 kilowatt hours. Gross revenues of gas and electric companies in the State will total $314,000,000, it is estimated.

"The year was a prosperous one for the gas and electrical industry in the Empire State," Mr. Brundage says. "According to company reports for the year to December 1 and estimates for the closing month, all records for production were surpassed.

"From present indications we look forward to another year of increased business at just about the same rate of progress. No sign appears of any business or industry development which would curtail the steady increase in sales of service.

"At the end of 1926 our figures indicate 2,775,000 electric meters in operation in the State of New York, which represents an increase in service installations of 240,000 in the year. There are, in round numbers, 2,725,000 gas meters in operation, or an increase of 120,000 installations during the year. Of the new installations, 192,000 have carried electric service into homes, and 96,000 have carried gas into homes.

"The companies of the State expended between $90,000,000 and $100,000,000 in 1926 in building new plants, installing new production machinery and constructing new electric lines and gas mains. More than 200,000 kilowatts have been added to the electrical generating facilities of the central stations in the State, and approximately 30,000,000 cubic feet a day to the production facilities of the gas manufacturing companies. The year saw a considerable extension of gas mains from cities into neighboring smaller communities; and a further important development in the gas industry was a notable increase in the substitution of manufactured gas for the waning supply of natural gas in the western part of the State."

Use of Gas in Industrial Increase

Charlotte, Mich.—Michigan is turning to manufactured gas for all varieties of heating jobs at a rate unprecedented in the long service record of the gas industry in the state, Charles R. Henderson, of Ann Arbor, president of the Michigan Gas Association, reported to members of the association.

Annual consumption of gas in Michigan increased 44 per cent in six years, and the number of consumers showed a gain of 40.6 per cent, while the average monthly consumption of gas per customer has increased 7.23 per cent, Mr. Henderson said.

"The homes and industries of the state consumed 27 billion cubic feet of gas in the past 12 months," he reported, "compared with 18½ billion recorded by Brown's directory of gas companies issued in 1920.

"Six years ago," Mr. Henderson said, "the average consumer used 3,938 cubic feet of gas each month. The present average is 4,026 cubic feet. Much of the increase is accounted for by the tremendous use of gas fuel in our factories. However, the use of gas in the home for heating water, space heating in rooms, heating homes and incinerating waste is accounting for more of the increase. Early in 1927, gas-operated refrigerators will go on the market and everyone is enthusiastic about the possibilities and economies which they promise."

Distribution of gas at high pressure is bringing service to a number of additional communities. Seventeen towns now receive gas from such mains radiating from Ann Arbor, Alma, Detroit, Jackson, Lansing, Mt. Clemens and Plymouth, and service will soon be extended to eight other communities.

"The increase in the use of gas has made necessary additional manufacturing capacity in practically every gas plant in the state, and a number of cities are now being served by new gas plants. Outstanding in this respect are the recent installation at Detroit, Flint and Port Huron. New plants at Adrian, Monroe and Plymouth are being planned.

E. C. Uhlig Addresses Chemical Society of Brooklyn "Poly."

Brooklyn, N. Y.—"Legitimate Distilling" was the subject of a talk by E. C. Uhlig, chief chemist of The Brooklyn Union Gas Company, to the Chemical Society of the Brooklyn Polytechnic Institute, on January 10th.

Mr. Uhlig told about the distillation of coal and oil into gas fuel. He explained the method of manufacturing illuminating gas and its distribution throughout the territory supplied by The Brooklyn Union Gas Company.

He told of the delivery of the raw materials to the various plants and how the company reached out all over the country to secure coal and oil for the manufacture of flexible fuel.

Mr. Uhlig mentioned the fact that the company manufactured and distributed, during the past year, more than 23,487,000,000 cubic feet of gas, which was the record manufacture since the establishment of The Brooklyn Union Gas Company.

He pointed out the fact that this enormous supply of fuel was delivered without interfering with traffic; without any delays because of storm, due to the fact that gas was delivered underground to the point desired in the home or factory of the consumer.

Mr. Uhlig's talk was illustrated by lantern slides. James E. Campbell, Jr., president of the Chemical Society presided, and introduced Mr. Uhlig.

Mammoth Gas Pipe Line Proposed

Meriden, Conn.—Meriden is included in the cities through which a mammoth gas pipe line would be laid from New Haven to Hartford and New Haven to Bridgeport. The January session of the General Assembly has been petitioned to enact legislation which would grant proper right of way for laying the lines.

If permission is granted by the legislature and the line laid Meriden might receive its gas supply from a great plant in New Haven just as it now receives electricity from distant points.

The Koppers Company, of Pittsburgh, which is planning the large New Haven plant for manufacturing gas and coke would, to start off, supply gas to the New Haven Gas Light Company, which it has purchased.

The petition includes the right of the Koppers people to change the name of their holdings in this State to the Connecticut Coke Company, or some other appropriate name, and to construct pipe lines in New Haven, Hamden, North Haven, Wallingford, Meriden, Berlin, New Britain, Newington and West Hartford to Hartford and from New Haven through the towns of New Haven, Orange, Milford and Stratford to Bridgeport. The petition is signed by E. E. Eyernbach, Edward M. Day, Joseph F. Berry, Hugh F. Smith, John S. Brookes, Jr., and Clarence S. Blakeslee.

Legislation for the extension of the gas making and distribution rights of various public utility companies is likely to occupy a prominent place in the sessions of the General Assembly the Connecticut Light and Power Company also seeks legislative support of new plans.

Edward M. Day, attorney for the Connecticut Light and Power Company, filed the petition for that company which asks authority to transmit and deliver gas to any companies authorized to manufacture, supply or distribute, and for such purpose to lay, construct and maintain all necessary mains and pipe lines.

The company also asks authority to build and maintain such dams across the Housatonic River and its tributaries as will best utilize the water and water powers of said river and tributaries.

* * *

Gas Mains Permitted in Two Boulevards

The public utilities commission has approved the petition of the Cambridge Gas Light Co. for permission to locate gas mains on Fresh Pond parkway and Memorial drive. The petition stated that public convenience and necessity required these mains to supply new customers.